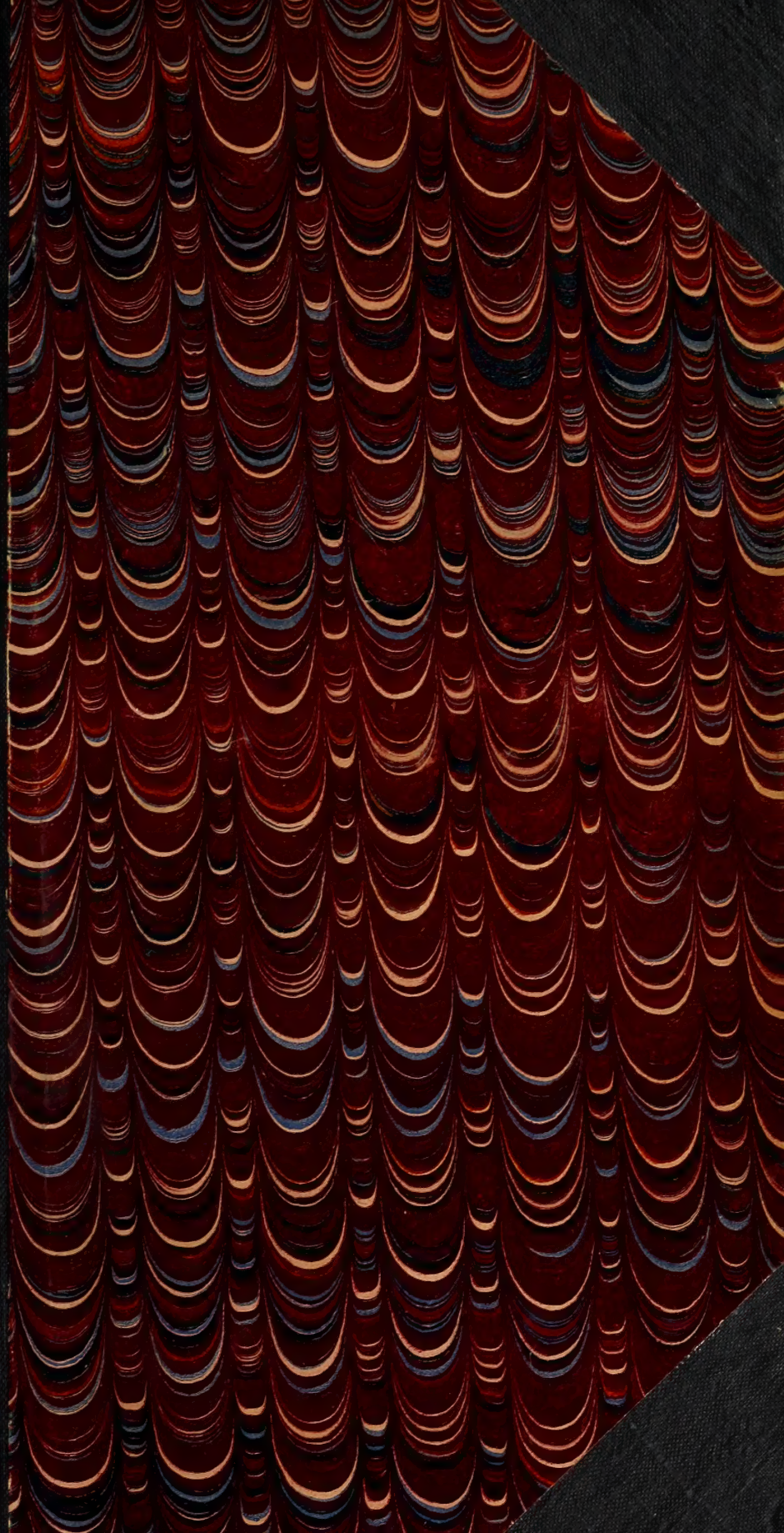


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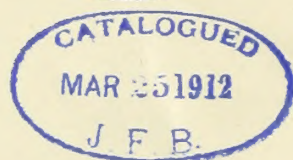
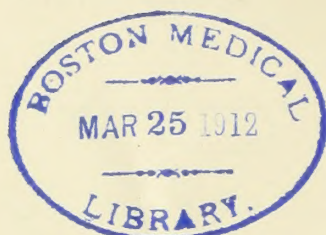


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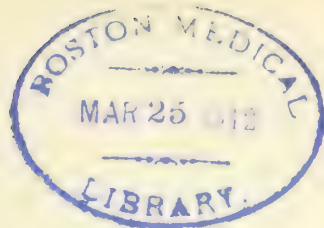
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## ORIGINAL ARTICLES

### THE OPERATIVE CURE OF CICATRICIAL AND CONGENITAL DEFORMITIES OF THE FACE \*

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PHILADELPHIA

In the development of eye, ear, nose and throat specialists in recent years some practitioners have lost sight of the broad principles on which all surgery of the face must be based. A tendency has, perhaps, existed to consider only a small section of the facial structures. It is desirable to obtain a wider view of the pathologic conditions wherein must be accomplished the work of the oculist, the otologist, the rhinologist, the dentist and the surgeon. It is not sufficient for the operator to be acquainted only with the so-called surgical affections of this region. He must not forget that general affections such as cretinism, myxedema and other disorders usually seen by the internist, are matters concerning which he must have knowledge to be efficient in the surgical work of the face.

Resort to reparative surgery of the face may be demanded to make good a loss by injury, as for example, of the framework of the nose; to supply a congenital defect as in hare-lip and absence from birth of an ear, to relieve a deformity such as that due to fracture of the zygoma; to give motion to an immobile or otherwise useless eyelid; to construct a wall for the cavity of the mouth after gangrene or gunshot wound of the cheek; or to give comeliness to a countenance disfigured by a horrid distortion due to the scarring of burns.

Dental operators have learned to accomplish astonishing results in orthodontia by the joint agency of retentive appliances, physiologic development and the employment of engineering methods in oral surgery. The surgeon, to be efficient in facial reparations, must use a similar combination of means. In addition he must have a good knowledge of the gross anatomy of the region, including the direction and character of the blood

\* Read before the Chicago Medical Society, Nov. 16, 1910.



and nerve supply. He must also be familiar with the physiology and the mechanical relations of the organs of special sense.

A due recognition of the mechanical problems presented and a study of the physical as well as the physiologic principles involved are essential to success. The inefficient results of surgical treatment sometimes seen after operative attacks on severe facial disfigurements are evidences of the truth of this statement. A reliance, however, on the mere mechanical perfection of the technic will not be sufficient for success. The surgeon must have a comprehension of the value of Nature's power of recuperation, when not impeded by septic infection of the tissues, and an ability promptly to recognize and successfully stop undesirable bacterial influences.

Surgical patience must also be a part of the equipment of the operator as patience and faith in him must be a part of the mental attitude of the patient. Repetition of operation is so often necessary and time for Nature to complete the work so absolutely essential that undue haste and impatience must be barred from the very beginning of treatment to the end.

Permanent implantations of foreign substances, plastic and solid, in the tissues for the purpose of gaining rigidity or altering contour, success in transplanting pieces of skin, cartilage, periosteum and bone, and the influences obtained by nerve anastomosis and changes in blood current, and examinations with x-rays have given the modern plastic surgeon new powers.

Reconstructive surgery of the face is not restricted to the skin and fascia. It includes operations on the bones of the face and skull and mechanical work on the teeth. The attainment of a proper occlusion of the teeth, the growth of the mandible, and the development of the accessory sinuses of the nose are most important factors in facial surgery. Sometimes a deformity may be corrected or an impending distortion prevented by mechanical appliances, intra-oral or extra-oral, alone. Depressed fracture of the zygoma is a good example of the need of correction of an osseous contour to relieve facial disfigurement.

Temporary resection of bone or temporary displacement of the soft tissues may be a necessary strategical move to gain access to the operative field. This is illustrated by the lateral displacement of the whole nose on a musculo-cutaneous hinge to enable the surgeon to reach a large disfiguring tumor in the naso-pharynx. After removal of such a growth, the nose is replaced and no ugly scar need be left. Many operations can be made within the mouth without external scarring, provided that efficient instruments be used by trained hands.

The operator in these major restorations must be a surgeon trained to meet the emergencies of hemorrhage, asphyxia and shock. His assistants and anesthetist cannot be tyros, unless the safety of the patient is considered to be unimportant. Sometimes preliminary control of blood trunks or temporary tracheotomy is demanded.

The anesthesia in surgery of the face is best obtained by using a hypodermatic injection of morphin, gr.  $\frac{1}{4}$ , and atropin, gr.  $\frac{1}{150}$ , fol-

lowed in about thirty minutes by inhalations of ether. The anesthetic sleep may be continued during operation with small amounts of ether vapor or chloroform vapor, pumped into the mouth or nose by means of a rubber bulb attached to a bottle with an exit tube. A trained assistant should always perform this service, lest postoperative ether pneumonia or sudden chloroform death occur. It is probable that a hypodermatic injection of hyoscin hydrobromate, about fifteen minutes after the injection of the morphin and atropin, lessens the amount of ether required to reduce freedom from pain. The dose should be from gr. 1/100 to gr. 1/50.

The external incisions should be made parallel to, or in the normal wrinkles in the face and not across them, so far as is possible. The portions of the face ordinarily in shadow are regions in which scars will be little seen. Behind the ear, under the brow and below the jaw or chin are such elective situations. By raising the upper lip or depressing the lower lip cuts may often be made inside the mouth and thus avoid visible scarring. Extensive operations on the bones may be made by these routes. Curved incisions make comparatively inconspicuous scars.

There are various methods of obtaining the tissues needed to restore lost structures, or to replace those moved after correcting cicatricial displacements. Flaps of skin and fascia may be cut in a manner which will leave their circulation and innervation comparatively good, because a pedicle remains to connect them with the general circulatory and nervous system. Such flaps will usually survive the change in position, even if there is some diminution of blood supply due to the bending and twisting of the footstalk. Tension must not be great on the pedicle. One of the difficulties in plastic surgery of the face is the frequent impossibility of preventing some septic soiling from secretions of the eyes, nose or mouth. Hence these pedunculated flaps are greatly employed. The asepsis should at least be not too defective during and after operation. Grafts, or free flaps, which are so-called because they have no pedicle, are more liable to become necrotic on the face than in many other regions of the body because of the frequent failure in asepsis. Grafts of skin cut after the methods of Réverdin, Thiersch, or Wolfe or Krause are used, however, satisfactorily at times.

When proper cellululo-cutaneous material cannot be obtained from the regions of the face or neck, it is not difficult to transport a portion of skin and fascia from the thigh or abdomen. This is done by raising a flap from either region, leaving a broad pedicle to maintain its circulation. The raw surface of the flap is then sutured to a raw surface made on the hand to receive it. The hand is fixed by dressings of gypsum to the thigh or abdomen for fourteen days. After the lapse of that time the flap is cut loose from the thigh or abdomen. It has grown to the hand. Later the hand is lifted to the face, and the flap, now having its circulation from the vessels in the hand, is used to repair the gap in the face. Subsequently it is modeled into the requisite shape.

A somewhat similar method is to fix the arm or hand to the face, by cutting and stitching a properly shaped flap from the surface of the arm or the palm of the hand, leaving only a pedicle attached to that member. The pedicle is divided after about fourteen days.

Bone grafts may readily be cut from the ribs or tibia and transplanted into the face. A toe has been grafted on the hand and transported to the face to aid in reconstructing a nose. Periosteal and cartilaginous grafts may be readily obtained from the costal region of the chest. Sometimes grafts of bone are shaved from the cranial bones.

When it becomes necessary to give rigidity to the reconstructed part of the face cellulo-cutaneous flaps may be superimposed by repeated operations until the resulting fibrous mass becomes stiff enough to answer the purpose. If this method is unsatisfactory, strips of cartilage, periosteum or bone itself may be transferred or transplanted into the flaps. These schemes answer in rhinoplasty and otoplasty. Sometimes these are cut at the time of operation and at once enclosed in the reparative flaps. At other times they are planted near the region to be repaired, and are allowed to become attached to the surrounding tissues by vascular connections. Later a flap containing the rigid graft is cut and used for the plastic operation.

Rigidity may also be obtained by introducing into the subcutaneous tissues paraffin, or compositions containing paraffin, in a fluid state, which subsequently become hard by cooling. The paraffin should have a melting point of about 105 to 110° F. It is melted and sterilized by heat, and injected under the skin, previously sterilized, by means of a hypodermic syringe and a needle with a rather large bore. Before the plastic substance becomes entirely hardened in cooling it may be moulded with the fingers. This method of operating is very valuable in cases of saddle-nose of mild grade. Occasionally plastic operations are made more effectual by giving solidity or rigidity to the tissues by the insertion and encapsulation of glass or metal globes, as in the eye, plates of metal or celluloid, or wire filigree.

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## JOINT DISEASES FROM THE ORTHOPEDIC STANDPOINT\*

JOHN RIDLON, M.D.

CHICAGO

From an orthopedic standpoint, in the consideration of chronic joint diseases we have many joint diseases due to many and various causes: but of the diseases that the orthopedic surgeon sees and is called on to treat, he practically only has osteo-arthritis, arthritis deformans, or rheumatoid arthritis, as it is variously called, and tuberculous diseases of the joints. As yet we do not know so very much about the cause of arthritis deformans, although we think that recently we have learned quite a good

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\* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.



deal: but of that I do not think I am called on to speak at this time, and my remarks had better be limited to a consideration of tuberculous joint diseases, and it will be my endeavor to fix in your mind a little more clearly what the orthopedic surgeon aims to do, and what you may aim to do as general practitioners and general surgeons in the cases you are called on to treat, and also perhaps to say a later word than has come to you about the views of orthopedic surgeons at the present time as to the treatment of these diseases.

In tuberculous joint disease there is one principle of treatment which is required in the management of all cases, and that is protection of the joint. No matter whether these joints are treated by mechanical, surgical, or by medical means, whether tuberculin is given, or the joints are injected with various medicines, or the various pastes are injected into tuberculous sinuses, in all cases these joints must be protected, in the broad sense, from motion. They must be protected from weight-bearing when in the lower extremities, and they must be protected from the injurious effects of the involuntary muscular spasm that is in force in the muscles controlling motions of the joints. Those are the things we have to do.

Now, what do we have to do in the treatment of the individual case? If the diagnosis is made and we are permitted to treat the case before deformity has taken place, all we have to do is to protect these joints for a reasonable time. But if the case comes to us after deformity has taken place, the first thing we have to do is to correct the deformity. That is essential for the good function of the limb, for the usefulness of the limb the rest of that individual's life. The deformity that has been allowed to develop in the diseased joint must be corrected, and the limb must be put in such a position that it will be most useful to the patient when once it is well. There are two ways of correcting these deformities. One is by an anesthetic and immediate correction with or without a cutting operation, and the other is to correct it gradually by a coaxing process by immobilizing the joint, inducing the contracted flexor muscles to relax, and changing the position from week to week, or fortnight to fortnight, or month to month, until the deformity has been corrected. And these deformities can be corrected in this way if structural shortening has not taken place in the flexor muscles, and bony changes in the joint have not gone on to such an extent that they prevent anatomic correction by this gentle means. One should always in my opinion correct these deformities by gentle means rather than by the immediate and active forcible means, if it is possible to do so, because correcting them by gentle means is a harmless and safe procedure, while correcting them by force either with or without a cutting operation is risky for the patient, and a certain percentage, perhaps as high as 10 per cent., will die as the result of general infection through the immediate correction by force of the deformed joint. Then, assuming we have corrected the deformity, we are in the same position for the treatment we should have been in if we had had no deformity at all, if we had received the case early.

As to protection of the joint, the first element of protection is immobilization, to so thoroughly immobilize the joint that the muscles controlling its action are put entirely at rest. How shall that be done? Generally speaking, in the hands of most men it can be done best by a strong, heavy, long, well-fitting, well-padded plaster-of-Paris splint, whether that joint is in the spine, the ankle, the knee, the hip, or anywhere else. Generally the immobilization can be done best in the hands of most men by a plaster-of-Paris splint; but in putting on a plaster-of-Paris splint remember the difficulty of immobilization and carry it far enough above the point of disease and far enough below the point of disease to really immobilize. It is ridiculous to try to immobilize a knee joint by starting a plaster-of-Paris splint at the ankle and ending three or four inches above the knee. If you want to immobilize a knee joint you must carry the plaster-of-Paris splint as far above as you started below, if you would make the immobilization effective; in the same way, when you wish to thoroughly immobilize a hip joint, if the joint is sensitive, and you wish to make the immobilization perfect, the plaster-of-Paris splint must be commenced at the ankle and carried as high as the axilla. In immobilizing the spine for Pott's disease, if the disease is at the eighth or ninth dorsal, in between the shoulder blades, it is absurd to put on a plaster jacket that will extend high enough to cover the angular deformity and only come up two or three inches below the neck in front. It covers up the disease and allows it to go on increasing while you and the patient are in fancied security. If you would treat Pott's disease in that region, you must carry the plaster splint up under the elevated chin, or better, include the entire head. The men who do not appreciate the importance of immobilization do not get immobilization. Undoubtedly, there are some cases that some physicians can immobilize more satisfactorily for themselves and for the patient by orthopedic appliances, such as steel braces. If you can design a brace with which to immobilize a joint, make your drawings and take them to a mechanic and oversee the construction of them, and can fit the brace yourself, you may be competent to treat the case by such means, but if you cannot do this, then you are not competent to treat any tuberculous joint disease with the brace. You must be able to do these things yourself. You cannot take measurements for a brace in Danville, send the order to Chicago and have a brace made that will serve you or the patient satisfactorily. You must be able to do these things yourself, and if you cannot do them, then use plaster-of-Paris with which you are all more or less familiar.

Immobilization in the past or up to within a few years has been the mainstay in the treatment of tuberculous joint diseases. It has been commenced early and kept up indefinitely and late until it was believed the joint was entirely well. To-day a good many orthopedic surgeons have changed or modified that view to some extent and they do not any longer believe that as complete immobilization, as is possible, is necessary or even the best treatment for a tuberculous joint until it is thoroughly well. They believe that there comes a time when there is no longer a tendency for the development of deformity at that joint, when the immo-

bilization can be diminished, the protection from motion lessened, a certain amount of motion permitted, and that a certain amount of motion will serve to hasten a cure. For instance, if you are treating a case of hip disease and you start treatment with a plaster-of-Paris splint, beginning at the shoe top and carried to the axilla, you may after a year or two or three, when there is no longer any tendency to the development of deformity, shorten this splint at the knee and allow knee motion; you may shorten this splint at the top down to the level of the umbilicus, so that there will be some motion at the hip joint, perhaps twenty or thirty-five degrees, and such motion in very many cases is not prejudicial, but adds somewhat to the hastening of a cure of the case. So much, then, for the factor of immobilization.

The next factor is protection from weight bearing, protection to the ankle, or the knee, or the hip, or the spine, when the patient is sitting up or standing and going about. If you use a plaster splint alone perfect protection cannot be had. The best assistance to protection probably is to be had from crutches, but they are unreliable, particularly so in the majority of these cases which will be in young children. So to protect any of the joints of the lower extremity or of the spine from weight bearing and the injury from weight bearing, the only safe protection is to put the patient in the horizontal position and to keep him there until he is well on the road to recovery. This is especially important in cases of tuberculosis of the spine. When I was a young man, no one thought of putting a patient with a tuberculous spine in bed, particularly when he or she was not suffering, and if put in bed, he was only put there for a few weeks, but year after year, since these twenty-five or thirty years have passed, we have learned to put these patients in bed for longer periods of time; and now, if we will treat a case of Pott's disease with the best possible result, we put the patient in the recumbent position and he is not allowed to stand up nor to sit up once for two or three or four years. If you have a case where the deformity is not great and its duration not longer than some months or a year, if you will put that patient's spine in the hyperextended position, bending it backward as far as it can go, and keeping it in the fullest hyperextension for about that time, you can be reasonably sure of curing spinal tuberculosis without deformity, and there is no other way in which you can cure spinal tuberculosis with deformity. If you do not do that, when the time comes you will discharge that patient really ashamed of the result, because the deformity will increase in spite of anything you can do in almost all the cases that you treat in the upright position. So do not hesitate to put patients in the lying posture and keep them lying down long enough to cure the disease of the spine.

The next point is protection against the involuntary muscular spasm. We get some protection from immobilization because it quiets the spasmodic action of the muscles. We get some protection by recumbency in these cases. In some instances we need something more, particularly in the hip cases. In some of these we need traction, and traction can be applied by weight and pulley. The patient must be absolutely in the



recumbent position in order to make traction by weight and pulley effective, and it must be kept up absolutely and continuously. The most effective and satisfactory traction apparatus for a hip case is a traction brace, but a traction brace is not a good and satisfactory appliance for any man to use who has not been trained in the use of it, and very few men have had the opportunity of being really trained in the use of traction braces, so that, generally speaking, I would say to you who must use traction in cases of hip disease, you had better be satisfied with recumbency and traction by weight and pulley, with the patient kept in bed for a certain period. And in connection with traction I take this occasion to utter a word of warning: there are some cases where traction increases the spasm, increases the pain, increases the suffering, but fortunately there are not very many. This is more often seen in shoulder joint disease, where even the weight of the arm is an added cause to exciting muscular spasm, and an added cause for pain and suffering, and where the support of the arm by a sling under the elbow and forearm, taking off the weight of the arm, will relieve the muscular spasm.

Just one other point, and that is with reference to injections of medicines, such as formalin, into these joints. In some cases it hastens the cure of the tuberculosis, but in all instances it leads to a stiffened joint which is wholly unnecessary. It is better to take a little more time and have a movable joint than to take a little less time and by using formalin have a stiff joint. Don't do it.

As to tuberculous abscesses, leave them alone unless they become mixed infections; then, of course, treat them as mixed infections, but ordinary cold tuberculous abscesses should be left alone. Of 100 cases, more would do better and more would live if they never saw a doctor than if they were treated surgically.

As to the treatment of tuberculous sinuses, we have used various kinds of paste, starting with Emil Beck's paste and modifying that in many ways during the last two or three years in treating something like 150 cases, and of this number I believe that the paste is useful in about 25 per cent. of the cases.

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## NEUROLOGICAL FEATURES IN SOME JOINT LESIONS \*

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A consideration of this question may properly be introduced by very brief reference to some of the anatomical relations of joints and nerve supply. It is useful to remember that every joint in the extremities is supplied by the same nerve that furnishes motor and trophic control to the muscles which extend that joint. To this simple rule there is a single exception—the ankle joint in its innervation is related to the calf

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\* Read at the sixtieth annual meeting of the Illinois State Medical Society, at Danville, May 18, 1910.

muscles which are properly flexors of the joint. The importance of this rule is at once evident when we realize that any pathologic process in the joint, whether slight or severe, may produce a wasting of the muscles which control the joint, and in that event the muscles involved are invariably the extensors, again with the single exception of the calf group and the ankle joint. The method in which this process works was shown by Mitchell, Valtat, and Charcot to depend on the reflex mechanism; that is to say, if the reflex circuit between joint and muscle by way of the spinal cord through the posterior root, the anterior gray horn, and the anterior root was not complete, the involvement of muscle secondary to an arthritis did not follow. Valtat, for instance, found that he could experimentally produce a limited muscular atrophy by inducing inflammation of the joint, and Hoffa found that when he irritated joints on both sides of the body and cut the posterior roots on one side, that the muscular wasting only occurred on the side where the arc was not interrupted. This conclusion, however, has been questioned by Bumm.<sup>1</sup> He reports numerous experiments in animals in which he produced arthritis in one extremity and then placed both this extremity and the one opposite in splints, and found that the so-called arthritic muscular atrophy appeared more quickly in the sound but splinted leg than in the one that was the seat of the joint inflammation. He draws the conclusion that the inactivity induced by an arthritis plays a greater part in the production of the subsequent muscle wasting than the joint inflammation itself or its influence on the correlated muscles through the reflex arc.

If this be true, the relation of this fact to the surgery of joint lesions and fractures, and its significance in the management of splints is quite apparent. He added a number of further observations to this idea of "inactivity-atrophy"<sup>2</sup> in the following year.

Sudek<sup>3</sup> reviews the inactivity-theory of Bumm and insists that the integrity of the muscles serving a joint depends on a number of circumstances, the principal one of which is the normal condition of joint surfaces, nerves, and muscle tissue, but an equally important one is the normal use of the joint mechanism. He draws the conclusion that the arthritic muscular atrophy which so commonly selects the extensor group of muscles while it may be induced by inactivity, nevertheless is produced through the reflex arc even under those circumstances, thereby maintaining the almost crucial proof brought forth in the experiments of Hoffa already mentioned. As practitioners, the important consideration is that either inflammation or fixation may result, and generally does result, in more or less wasting of the extensor group of muscles serving the implicated joints.

The tolerably definite symptoms presented by an arthritic atrophy of the sort under consideration are as follows: 1. Retention of the tendon reflexes or their exaggeration; 2. Maintenance of the electrical excitability of both muscles and nerves in a degree proportional to the amount of preserved muscle bulk; 3. Limitation of the atrophy to the extensors;

1. Münch. med. Wehnschr., 1905.

2. Wien. med. Presse, No. 51.

3. Münch. med. Wehnschr., 1906

4. No decided sensory changes excepting the pain and tenderness directly and topically related to the joint lesion.

The prognosis of these atrophies is directly dependent on that of the joint lesion, although a fractional atrophy may persist indefinitely even when the joint seems to have made a complete recovery. I say seems to have recovered, because in such an instance it is impossible to assert full restitution of normal conditions in a joint once seriously disturbed.

Unlike these extensor muscle atrophies dependent on joint lesions or fixations, and which are practically always situated on the proximal side of the joint, we sometimes encounter a distally situated muscular defect due to the injury or inflammation of nerves which pass over the affected joints. In such cases, motor defect is found in the distribution of such nerves with decreased or abolished or changed reflex, electrical, trophic, and sensory features. In a word, these are accidental and secondary neuritides.

Associated with those changes in the spinal cord which are typically a part of tabes we encounter alleged dystrophic joint changes of the most serious and interesting character. These arthropathies, with which the name of Charcot is permanently linked, still present a debatable pathogenesis. There can be little doubt that traumatism acts as an inciting cause but the condition of the joints due to the changes in the chemical constituents of the bones, the alterations in the trophism of the soft parts, the lack of support and control due to the hypotonically relaxed muscles, the failure of sensory warnings due to anesthesia, and the incoordinate and violent use of the limbs, all contribute something to the occurrence of tabic joints.

Among those who have reviewed this pathologic question in the present decade, Idelsohn<sup>4</sup> attributes most importance to the vascular changes in and about the joints and is disposed to neglect or even deny the trophic view.

Borchard<sup>5</sup> in studying a case of arthropathy in a syringomyelic asserts that trauma plays the leading and perhaps the sole causal part. Etienne<sup>6</sup> reports a case of tabic joints in a man who forty years before had repeated attacks of subacute rheumatism. To these he attributes vascular changes which after the development of tabes led to arthropathies. He recites another case in which both knees presented enormous arthropathies in a tabic who five years before sustained a severe traumatism of both these joints, and traces one to the other. Two years later (1908) after further study of these joint lesions Etienne with Champay<sup>7</sup> reports findings in the anterior horn cells of spinal segments corresponding to arthropathic joints in a case of tabes, one of syringomyelia, and one of progressive spinal muscular atrophy. All showed similar material pathologic cell changes. Such changes are necessarily related to the trophic integrity of joints, but whether the cord cell changes are primary, secondary, or synchronous and coordinate with the joint changes is not yet determined. It is surely admissible that such arthropathies cannot be considered as

4. Deutsch. Zeitschr. f. Nervenheilk., Bd. 27, p. 121

5. Monatschr. f. Unfallheilk., Bd. 72, p. 513.

6. Rev. Neurologique, No. 23, p. 1137.

7. L'Encephale, No. 5, p. 169.



purely traumatic or purely vascular as they do not, in the absence of spinal cord changes, occur in the uncountable cases of joint injury or vascular changes or both combined.

Taking the arthritic muscular atrophies and the Charcot arthropathies together, there seems to be good ground for emphasizing the direct and reflex relations of trophic cord elements to joint lesions.

These considerations attain still greater importance when we turn to the subject of arthritis deformans. In the arthritic muscular atrophies it seems proved that the process beginning in the joint acts through the trophic arc. In tabes it is clear that cord changes related to this arc are essential to the extensive and characteristic arthropathies. Can we then incriminate or must we exclude the cord, that is to say the reflex mechanism, in arthritis deformans? As clinicians we readily recall the flexed postures of body and limbs, of wrists and fingers, of neck and spine, of shoulders, elbows, hips and knees in chronic multiple arthritis. This universal flexor predominance may have some relation to the rule of joint and extensor muscle association thereby tending to exaggerate the normal preponderance of flexor muscles. At the ankle joint we find the calf group yielding according to the rule of atrophies, and the foot does not strongly tend to the equine position even in cases long bedridden. When the joints become more or less ankylosed the extensor atrophies are correspondingly developed. That arthritis deformans is a result of metabolic faults may be freely admitted, but it would seem probable that the distribution of the joint features, the characteristic joint deformities, and the trophic changes in joints and ligaments find their origin in the nervous supply and the trophic control of spinal centers. In this condition, as far as I know, cellular cord changes have not been demonstrated, but attention has for the most part been focussed on the joints alone.

In a number of cases of arthritis deformans in young subjects I have noted numerous functional and neuritic features such as neurasthenia, localized paresthesias, hysteria, and a decided tendency to extensor atrophy. Persistent attention to the correction of the nervous manifestations has seemed, of course in conjunction with general and dietetic management, to secure better and more permanent relief than either method alone. A combination of rest-cure, massage, hydrotherapy, and dietetics is strongly indicated.

"Hysterical joints" sometimes present a great deal of diagnostic difficulty. Not only may hysteria impose a classical arthritic position on a limb the seat of a hysterical joint, but the articulation may show considerable swelling in the form of hysterical edema. Usually an anesthetic demonstrates the complete freedom of the joint. A close analysis of the onset conditions, commonly with emotional disturbance and a too rapid development of the full picture, may put one on guard. The peculiar superficial sensitiveness and particularly its geometrical limits, with the absence of fever, leukocytosis and other inflammatory data, confirm the functional nature of the joint trouble. But sometimes an actual arthritis is the starting point of the hysterical syndrome, which may greatly intensify all the symptoms and in some cases long outlast the joint inflammation.

## THE BACTERIOLOGY AND PATHOLOGY OF ARTHRITIS \*

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In addition to the infections resulting from trauma, or direct extension from an adjacent focus of suppuration, or associated with certain specific diseases such as syphilis and tuberculosis, lesions of the joints, periosteum, and tendon sheaths may occur in practically all the acute infectious diseases, either as an incident in the course of the disease or as a more or less remote sequel.

In some of these acute diseases such as typhoid fever and pneumonia the specific organism may be isolated from the blood in a very high percentage of cases and is probably present in all at some period of the disease. The streptococcal arthritis following scarlet fever is associated with a demonstrable streptococcemia. In septicemia and pyemia, the joints are not infrequently involved. Recent studies in epidemic meningitis have shown that the organisms are present in the blood, and cases of arthritis have been reported. In all of these infections, the arthritis occurs as a more or less incidental complication of diseases in which the prominent phenomena involve other organs of the body.

Acute articular rheumatism presents another type of disease in which the involvement of the serous membranes of joints, heart, and pleura occupy a more prominent place in the general symptomatology. While we may not be willing to accept the claims of the *Micrococcus rheumaticus*, or the bacillus of Achalmé, we must admit that the symptoms and course of acute articular rheumatism are those of an acute infection, many of the features of which resemble those of a mild streptococcal origin, "a modified pyemia." Of interest in this connection is the recent report by Senator<sup>1</sup> of cases of typical acute articular rheumatism and endocarditis following operative trauma to the nose. The mild arthritides occasionally seen after operations about the nose and pharynx and those associated with apparently localized infections such as furunculosis are instances of mild bacteriemia with localization in the joints.

Gonococcal arthritis presents still another type of general infection in which, however, the localizations in joints, tendon-sheaths and periosteum frequently overshadow the constitutional features of the disease. Owing to the difficulties attending the culture of the gonococcus, it is not so readily demonstrable in the blood, but is nevertheless present during the acute stages at least of gonococcal arthritis, and has been repeatedly isolated from the blood and the joints. This fact is of considerable importance in the treatment of acute arthritis in which the severe septic symptoms may suggest a frankly purulent arthritis, when in reality the toxic symptoms are due to the coincident bacteriemia. In some cases of gonococcal infection, the arthritis may be insignificant or absent, and the disease then presents the picture of a severe sepsis, or may simulate typhoid fever.

\* Read at the Sixtieth Annual Meeting of the Illinois Medical Society at Danville, May 18, 1910.

1. Med. Klin., vi, No. 3, Feb. 20, 1910.

Acute tuberculous arthritis is occasionally seen in which the arthritis may subside without leaving clinical signs, only to recur later in the same or new joints, finally passing into the more common forms of chronic tuberculous joint disease. A number of these cases of acute transient arthritis have been shown to be of bacillary origin and not as was formerly believed the result of toxins acting on the joints. The arthritis is often associated with a frank tuberculosis elsewhere in the body, but may occur without clinical evidence of such involvement. In the instances where autopsies have been made, caseating tuberculosis of peribronchial or other lymph nodes is a frequent finding, either with or without other tuberculous lesions.

The pathologic changes in the tissues in which the organism of any given bacteriemia becomes localized obviously will depend on the virulence of the organism, the general resistance of the individual, and the anatomic structure and physiologic relations of the region involved. Serous membranes such as those of the joints are continually exposed to physiologic trauma, and for this reason, among others, an irritative lesion which might pass unnoticed in muscle or subcutaneous tissue, quickly produces clinical symptoms in the joint.

The bacterial embolus reaches some portion of the periarticular structure and a focus of infection is formed either in the more superficial portions of the joint or deeper in the capsule, or in the fibrous tissue underlying the synovialis. In the latter case, the layers of cells of the synovialis become swollen, and at the point of greatest damage desquamation of the altered cells of the synovial surface occurs. This irritation may cause a rapid increase in the synovial secretion, with resulting distention of the joint. The effusion may be sterile or may contain the infecting organism, if it has passed from the original focus through the damaged tissues of the synovialis. D. J. Davis in a study of experimental arthritis in rabbits, using cultures of streptococcus pyogenes injected into the ear vein, has found that when the joints are examined soon after the appearance of the arthritis, the lesion is frequently entirely extrasynovial; later the joint contains a small amount of glairy fluid in which a few organisms and leukocytes are present; still later a purulent arthritis is found. The normal motions of the joint and the traction of the muscles tend to increase the tension of the focus, and favor its extension into the joint.

If the focus of infection lies at a point more distant from the joint surface, there may be no involvement of the synovialis, and clinically we have a more or less extensive peri-arthritis.

The nature of the infecting organism whether streptococcus, pneumococcus, or gonococcus, etc., and the virulence of the particular strain relative to the resisting power of the body determine, of course, to a large extent the duration and degree of pathologic changes of the arthritis. Acute arthritis often heals with complete restoration of normal joint structure and function, sometimes even after prolonged intra-articular suppuration. Or if the infection has been virulent or extensive the joint cartilage may be partially destroyed or secondary connective tissue proliferation occur with resulting adhesions between the joint surfaces.



The study of the chronic forms of infectious arthritis which follow the acute arthritides of known etiology is of interest because it throws much light on the ill-defined group of diseases known as arthritis deformans. This group has in the past been made the repository for the more obscure cases of chronic joint disease whether supposedly metabolic, nutritional or infectious in origin, for which a more definite etiologic classification could not be found. If by comparative studies the infectious origin of a certain number of the obscure cases can be demonstrated, the task of solving the problem of the etiology of the remainder becomes to this extent simplified.

The etiologic relation of chronic local infections to arthritis deformans has been long recognized. Recurring and persistent infections of the tonsils, ear and nose have often been found associated with arthritis deformans, the symptoms of which have subsided after the removal of the source of infection. Wirgman and Turner<sup>2</sup> have noted a frequent pyorrhea alveolaris in chronic arthritides, and with the cure of the buccal suppuration the joint symptoms have improved. E. H. Ochsner<sup>3</sup> and others have noted the subsidence of beginning arthritis on the removal of abdominal sources of infection and toxemia such as chronic appendicitis and cholecystitis.

The series of joint lesions due to the gonococcus form an instructive field for the study of the different clinical varieties of arthritis which may be caused by one organism. Here we have first the ordinary acute gonococcal arthritis with frequent occurrence of the organisms in the joint fluid, and with periartthritis prominently associated. This acute stage may heal, with or without adhesions or ankylosis, or may pass into a chronic or recurrent stage in which there is often a persistent focus of infection elsewhere in the body. The acute stage may, however, subside almost entirely, and after the lapse of months or years, the joint changes again advance, but this time without the symptoms of infection and result in a pathologic condition of the joint identical with that found in arthritis deformans.

Still more interesting are those cases described by Bouchard<sup>4</sup> and others in which the typical joint lesions of arthritis deformans develop years after gonococcal infection without the occurrence of an initial acute stage.

Cases illustrative of a similar series of arthritic changes may be found in the literature of typhoid arthritis. Rothschild<sup>5</sup> has recently reported cases of typhoid fever with acute arthritis in which after several years the typical lesions of arthritis deformans developed in the joints involved in the acute arthritis. In rabbits, Davis has seen arthritic lesions identical with those of arthritis deformans develop subsequent to acute streptococcus arthritis.

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2. Clin. Jour., London, May 26, 1909.

3. Jour. A. M. A., 1910, liv, 771.

4. Zeitschr. f. Klin. Med., 1907, lxii, 19.

5. Berl. klin. Wehnschr., 1909, xlvii, No. 4, 133.

The bacteria which initiate an arthritis may disappear entirely from the joint, but if the synovialis or the perichondrium are sufficiently injured, the connective tissue formation may continue, and stimulated by the trauma of joint motion, the slow erosion of cartilage by granulation tissue overgrowth results in a gradual disorganization or perhaps bony ankylosis of the joint. The persistence of the original infection is not essential to the progression of the chronic arthritic changes.

Nichols and Richardson<sup>6</sup> from an extensive study of the pathology of arthritis deformans have proposed a classification into proliferative and degenerative types, these terms referring to the character of the pathologic process rather than to the clinical appearance of the joint. The proliferative type begins in the synovialis and perichondrium, and is characterized by the erosion and absorption of cartilage by proliferating granulation tissue, the formation of pedunculated masses of connective tissue within the joint, and frequently ankylosis either fibrous or through the fusion of exposed bony extremities. The degenerative type begins in the substance of the cartilage, which becomes striated and degenerates, leaving the underlying bone exposed. The increased irritation of this exposed bone results in a thickening of the trabeculae with increase in the density of the bone, and eburnation. The plane of articulation is altered, and overgrowth of one facet occurs to compensate for loss of substance in the opposite facet with the production of great irregularities in the articular surfaces and frequently ankylosis by deformity without true adhesion of joint surfaces.

Although these two types of arthritis cannot be definitely associated with any special set of etiologic agents, cases of known infectious origin are frequently found to be of the proliferative type, whereas the degenerative type is more often found in persons past middle age in whom nutritional changes in the tissues are likely to be present.

A certain proportion of cases of arthritis deformans are clearly due to the presence of bacteria in the joints, either for long periods, or during the initial stages of the disease. There are, however, many cases in which it seems probable that the arthritic changes are the result of the selective action of toxins of bacterial or metabolic origin, and in still other instances it appears that trauma without infection and the faulty nutrition attendant on advancing age are responsible for the joint changes. Thus F. Kroh<sup>7</sup> was able to produce the lesions of arthritis deformans in animals by operative removal of one condyle of the femur.

The further research into the etiology and relationship of the various types of arthritis will be materially assisted by bearing in mind that not only may the same organism give rise to several forms of arthritis, but that the same type of arthritis may be due to widely different causes, and that when a joint has received its initial injury, the subsequent pathologic changes are determined to a large extent by local mechanical and physiologic conditions to which the tissues of the joint are exposed.

6. Jour. Med. Research, 1909, xxi, No. 2, p. 149.

7. Deutsch. Zeitschr. f. Chir., 1909, xcix, Nos. 3-6.

## DISCUSSION ON PAPERS OF DRS. IRONS, CHURCH AND RIDLON.

Dr. John L. Porter, Chicago:—I regret very much we have not had the pleasure of listening to Dr. Murphy's paper, because I anticipated great pleasure in hearing what he had to say about the treatment, mechanical and otherwise, of joint infections.

In listening to what has been said, there are two or three points that have occurred to me which I want to speak of briefly. First, in regard to the treatment of gonorrheal joints. During the past two years I have made it a practice to wash out with normal salt solution or with sterile water all gonorrheal joints which came under my observation before they had become stiff. The more acute the attack the better has been the result from this treatment. I have followed out that course of treatment in quite a large series of cases in my service at the Cook County Hospital and at the St. Luke's Hospital, and I have not yet seen a case of gonorrheal arthritis which has not recovered more promptly by that method of treatment than by any expectant method. The method which I use is simply to introduce into the joint two trocars. If it is a knee joint I introduce one trocar from each side, and I wash out the joint thoroughly with normal salt solution, or with a weak solution of iodine, or even sterile water, seal up the punctures, immobilize the joint, and I have been surprised at the rapidity of the recovery. If there is any motion left in the knee joint, I have no hesitation in washing it out. If the joint is stiff, I do not believe it does any good to wash it out, but in an acute case of gonorrheal arthritis, with intense pain, muscular spasm, swelling of the joint, recovery is more satisfactory by this plan than by any expectant method of treatment which I have ever used. I believe it is good surgery.

One word about the treatment of arthritis deformans. There seems to be in the minds of the general practitioners an idea that rheumatoid arthritis is benefited by motion, massage, vibratory treatment, hot air, etc. In an experience covering quite a large number of cases of my own, as well as observing those in the practice of others, we have learned that our best results in cases of arthritis deformans are secured by immobilization, the same as in tuberculosis or any of the other chronic infections. It seems to many that prolonged immobilization in a case of tuberculosis of the hip or of the spine, and especially prolonged recumbency in bed, is a very tedious punishment. I want to say that is a mistake. We must remember that most of these cases of tuberculosis of the hip and spine in particular occur in children, and a child of the age 5 to 10 years can well afford four years or even five years recumbency, if it can be carried out, to get well or to help it to get well without deformity. Perhaps this would not apply to adult life, although in many cases I have kept adults recumbent in bed with traction, where paraplegia or signs of cord pressure supervened on a tuberculous spondylitis, for a year and a half or two years. These patients got well with better results than we could secure by any other method of treatment.

Dr. D'Orsay Hecht, Chicago:—I take it that this symposium was arranged for the purpose of emphasizing that there is an overlapping of the fields in which the orthopedic surgeon and neurologist work. In the brief space of time the subject has been concisely presented, but I feel that the borderline features might have been more clearly set forth and some points in differential diagnosis more definitely brought out. If there is any one thing that requires careful and clear interpretation, either from the neurologic or orthopedic standpoint, it is, in my opinion, the symptom of pain. As I meet with it in neurologic practice, I find it one of the most neglected of all the clinical manifestations. It is cursorily dealt with, little regard being held for its origin, less for its topography and none for its area of radiation. With these points disregarded, how, then, may one know whether it is a joint or a nerve pain, whether it be neuritic or arthritic? In the one instance, it has value for the orthopedist; in the other it comes within the domain of the neurologist. Failure to adequately interpret pain is, I think, as largely a sin of omission as one of commission; there is that easy tendency not to examine carefully for pain. I am impressed with this fact particularly as the



result of a fairly large experience with that very popular diagnosis of sciatica. The number of mistakes in diagnosis that are committed in the name of this particular clinical neuralgia, designated as sciatica, which blankets so many genuine lesions with underlying pathology, is simply amazing. I have in mind the cases of spondylitis that have been called lumbago, the cases of spinal cord tumor that have been called intercostal neuralgia, the cases of pachymeningitis that have been designated as rheumatism, all of them showing unmistakable somatic evidence of something more than mere neuralgic pain. The readiness and complacency with which even very careful observers diagnose sciatica is to me a reflection on good technic in physical examination. Pain as an expression of either joint or nerve disease, is of the utmost importance in delimiting the diagnosis.

As for the prevalence of arthritis associated with atrophy, Dr. Church is right in stating that this condition is many times overlooked by the general practitioner. I should say that the practitioner is much too frequently disposed to think that when atrophy ensues it is in all probability due to a poliomyelitis, a neuritis, or other trophic disturbance solely of nerve origin. It seldom occurs to him that it may follow joint disease as well, in which condition it is of significance, as Dr. Church has stated, to remember that the reflexes in the atrophic extremity are not lost, but commonly present, or even exaggerated.

Dr. H. C. Fairbrother, East St. Louis:—I wish to call attention to one point mentioned in Dr. Ridlon's paper, and that is his division of the subject of joint diseases into two broad subdivisions, rheumatic and tubercular. I wish to take exception to that division, as I would not like to have this society go on record as accepting that subdivision of joint diseases—rheumatic and tubercular—because in my opinion a large number of the joint diseases that are infectious are not tubercular. I have had many studies made for the purpose of finding the tubercle bacillus in different forms of joint diseases, but have rarely found it. On the other hand, I have found the bacilli of other infections. Speaking from the standpoint of the general practitioner, I think it is important to have this division studied down to a point. I know the accident insurance companies will agree with Dr. Ridlon that no diseases of joints are simply traumatic, but are all rheumatic or tubercular. I know they take that stand, and on that account I wish to go on record in opposition to that position, and, as I have said, I have made many studies of joint diseases with reference to the elucidation of this point. I have had many cases of joint disease, in ankles and knees, due to traumatism, to a severe wrench of the joint, with rupture of some of the ligaments, resulting in infection, and sometimes a suppurative infection, that evidently had its origin in injury.

Dr. Emil G. Beck, Chicago:—We all agree that the most modern treatment of all joint infections is immobilization, as pointed out by Dr. Ridlon, and the methods of immobilization are so well known that I shall not dwell on them. After we have failed, however, to arrest the disease, on account of the child's insufficient resistance, and it has progressed to the abscess formation, then it is the physician's duty to act at once. When we study the statistics, we will find that the mortality ten years ago from cases that went on to abscess formation was great—50 to 60 per cent.—but to-day, with our modern treatment, the mortality has been reduced to such an extent that it is almost incredible the number of lives that have been saved. Nevertheless, I come across a great many cases where abscesses were opened and drained in spite of the fact that it is considered dangerous to open a tuberculous abscess and drain it, proving that many physicians are not yet well informed on that point. Calot says in his work that the attitude of the physician toward a child which has a tuberculous abscess is of the utmost importance to its life. If you know just what to do you will probably save every joint. You can have your choice of two methods. You should keep the patient in bed; the abscess may subside of its own accord; but if you note a softening and a red surface, signs that this abscess is going to break, it is your duty to act at once and not let it break spontaneously. You must prevent that. You can use Calot's method of introducing an aspirating needle into the abscess and allowing

the material (which is not pus, by the way, but it is sterile in almost all cases) to escape, and inject a solution of naphthol-camphor and glycerin 1-5, which he claims produces the most remarkable results. A second method is to make a small incision of one-half an inch; allow the pus to escape, and introduce not more than 100 grams of a 10 per cent. bismuth paste. Of forty cases in which I have used the bismuth paste, as a modifying substance, not a single one has had a secondary infection. The secretion two days after the injection will be serous. Dr. Ridlon has used this method himself, but since his results are now less favorable than at first, I wish to say this: The first year, when the method was used at the Home for Crippled Children, under Dr. Ridlon's and Dr. Blanchard's care, I assisted them for three months, and in the first series of 24 cases there were 65 per cent. cures. But since then they have modified the method and the percentage of cures has been reduced to 25 per cent. The only suggestion I would make is that they revert to the original formula, and then probably they will get 65 per cent. cures again.

Dr. Edward H. Ochsner, Chicago:—Dr. Irons has covered the question of the bacteriology of joint infections so thoroughly that there is very little to say except this: there is a very prevalent or common opinion that staphylococcus infection of the joints is very rare, but that is not the case. Staphylococcus infection of joints simulating tuberculosis is quite common. I have myself had quite a series of cases of subacute infections of joints that were diagnosed as tubercular, from whom I was able to recover pure cultures of the different staphylococcic micro-organisms.

Dr. Ridlon has covered the question of tuberculous joints in his usual plain, lucid, straightforward manner. I wish to say a word, however, on the other type of joint affections, leaving out for a moment the etiology. If a case of non-tubercular inflammatory process of the joint, which is not nervous in origin, comes to me, I always first try to find the origin of the inflammatory process. That, after all, is the most important thing, and it is surprising in what large percentage of cases this primary focus can be found if one will take time and the trouble to look carefully and study the patient from every angle. When the primary focus is found, the thing to do is to remove it, if possible. Here, again, it is surprising to note in what percentage of cases the primary focus can be removed. If the focus cannot be found, or if found, in addition to its removal, there are three things that are usually of great importance: First, general hygiene, and this is a thing which is so often neglected by us all. Second, proper immobilization of the joint. I do not care what the cause of the infection is so long as it is an infection or an irritation. I believe that absolute rest of that extremity or joint is the second most important problem to meet. Nature teaches us that lesson. The first thing Nature does, if a joint becomes involved, becomes painful, causing rigidity of the muscles, is to make an attempt at immobilization. To be sure, that attempt on the part of Nature very often is only partial and not very effective. By establishing absolute immobilization we have fulfilled the second most important function.

Dr. John Ridlon, Chicago (closing the discussion):—I do not think Dr. Porter meant to convey to the audience the impression he conveyed to me, namely, that he treated all cases of arthritis deformans by immobilization from start to finish. I think there are some cases which require immobilization for a certain period. There are others that do not require immobilization at any period, and all cases do not require immobilization throughout their entire course.

As to the remarks made by Dr. Fairbrother, let me say that he misunderstood what I intended to convey. I am an orthopedic surgeon. I see only a limited class of cases. I do not see acute infections of joints, like gonorrheal joints and septic joints, and I do not see the sprains and injuries which the general practitioner and the general surgeon see. I meant to say, that of the cases that come to me, it was not worth my while for the time I had to speak of anything but cases of osteoarthritic joints and tuberculous joints. I would not divide all

joint affections into these two classes by any manner of means, but only those I have to deal with.

With reference to the remarks made by Dr. Beck, if I had devised so ingenious and valuable method of treatment as Dr. Beck has done, I am sure I would believe in it just as thoroughly as he does, but as I did not devise it, I have not all the love of parentage for the method. (Laughter.) I am perhaps an uncle or something like that of the method, because we took it up early, and we tried it out as we think reasonably fairly and well, and when we reported our first series of cases, we gave a percentage of cures of about 60 per cent., and now Dr. Beck rather reproaches me because I say 24 per cent., and the reason I say that number is not because of our bad treatment now, but because of our bad treatment then, some of the cases having relapsed and been made worse when we thought they were cured. To-day I do not run the risk of opening any tuberculous abscess and injecting it with Dr. Beck's paste or any other paste, as we did for a while, for I think it is dangerous. I do not inject any sinus that has opened recently, because I think it is useless and oftentimes dangerous; but in old sinuses this method of treatment is valuable.

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## THE IMPORTANCE OF MEDICAL ORGANIZATION IN THE DIFFUSION OF MEDICAL KNOWLEDGE AND THE PROMOTION OF ETHICAL RELATIONS AMONG PHYSICIANS \*

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*Mr. President, and Members of the Medical Profession:*

Without taking up the time of this meeting in unnecessary words of introduction, let me go at once to the heart of my subject. The subject that has been assigned me for discussion; "The Importance of Medical Organization in the Diffusion of Medical Knowledge and the Promotion of Ethical Relations among Physicians" is one worthy of our earnest consideration.

Let me ask you to go back with me in your own personal history. Let me ask you to go back with me into the history of the past in your own personal experiences. Let me ask you to go back with me to the earlier years of your life; to the day when you first crossed the threshold of the institution which you are proud to call your Alma Mater.

You were seated in the amphitheater with your eyes firmly fixed upon a group of distinguished gentlemen—the members of the faculty. You congratulated yourselves that it was your rare privilege to sit at the feet of these masters. You congratulated yourselves that it was your good fortune to be associated with the members of that body of scientific men. You congratulated yourselves for the ample opportunities afforded for studying the art and science of medicine under such an eminent corps of preceptors and instructors.

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During the course of the prescribed curriculum you were taught and trained in the theory and practice of the medical art. You were given instruction in the various departments of medical science, and at the successful completion of the course you had attained an adequate knowledge of the various subjects, and were pronounced proficient, and were therefore authorized by the official signatures and seal of the institution to assume the duties and responsibilities laid upon you as members of your chosen profession.

Again you were informed in reference to a line of conduct that is incorporated in the code of medical ethics. You were taught professional courtesies. You were taught to recognize not only your own rights and privileges, but also those of others in the profession. You were taught that you should cultivate fellowship and friendship and encourage the social interests of your brother practitioners. You were taught to uphold the dignity and honor of the profession and to maintain ethical standards and strive to promote the interests not only of the profession, but of the welfare of the public. You were instructed in your duties to protect one another against impositions. You were warned of the dangers in all cases of unprofessional conduct, and advised to treat your colleagues with civility and respect.

You were informed that "Medicine is a liberal profession and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice."

Do we not see in all of this, the two essential elements of my subject, namely: "The diffusion of Medical Knowledge" and the "Promotion of Ethical Relations among Physicians"? Is not this exactly what is done by this institution, which is none other than "A Medical Organization" whose aim and purpose is the spread of scientific medical knowledge and the advancement of proper ethical medical relationships among men? I think the answers are patent to all. Every member of the medical profession is entitled to all of its privileges and immunities, only through the benefits arising from medical organization.

Now, the medical organization of our own great commonwealth—The Illinois State Medical Society—stands in practically the same relation to the profession within her borders, as the medical college does toward her graduates. We have seen what the medical institution has done for her sons and daughters, in furnishing them with the means of knowledge and attainments, and impressing upon them the precepts of morality, and in sending them forth prepared for the battles of life, or, rather for the battles of death. So, too, the state medical society is ever ready to welcome these children, the offspring of her institutions and those of sister states, and give them every kind of encouragement and assistance, to further exalt their standing, and to extend the bounds of their usefulness to mankind. How important it is, then, to the profession to have its members in affiliation with the medical organization of the county, state and nation! For, through these avenues, and through their influence, opportunity is afforded to disseminate medical knowledge, and to encour-

age the proper relationships among members, of truth, of honor, and of justice.

But these are not the only benefits that arise. Whenever physicians come to an understanding of their mutual relations, and common interests involved in their professional duties; whenever they come to fully understand and appreciate their obligations one to another; whenever they thoroughly realize their responsibilities to humanity, then they will see the importance of the spread of medical knowledge not only among themselves, but in the education of an indiscriminating public; and there are no better channels for this important work than through the "Medical Organizations" of the present day.

Again, the medical organizations of the county, state and nation stand in the same relations to the great body of physicians, that the schools, colleges and libraries of the world do to an educated people. The great libraries are our greatest universities. In them we find the best thought and intellect of every age; in them we find the combined wisdom of all nations; in them we find a consensus of opinions on all the problems that have engaged the attention of the human mind. Likewise, the medical organizations are post-graduate schools, which offer the wisest counsels, the soundest judgment, the profoundest reason and the broadest view, in every department of human knowledge, that is touched in the realm of medicine and surgery.

The importance of medical organization in dispensing knowledge and determining ethical standards is seen in the work done by medical societies in elevating and improving the standard of medical education. Along with progress in the arts and sciences, modern medicine has kept an even pace; and with the remarkable development in this particular field during the last decade, not a small part of it is due to the influence of medical societies, and the higher ideals which they have advocated and adopted. Also, the social and material interests of the profession have been widened and extended by the recognition and appreciation of these higher standards of education.

The organized medical profession is a benefactor in directing public opinion in the problems of public health and sanitary legislation. And, here again, we see the importance of medical organization in the application of medical knowledge to the enactment and enforcement of wise and just laws in the interest of the welfare of the public. It would seem that we can not lay too much stress and emphasis on the value and importance of medical organization, for just in proportion as the profession is thoroughly organized, to that same degree will it have power and strength and authority, not only to impart helpful and useful knowledge, and establish the proper relations among its own members; but to speak with authority on all medical questions and direct every policy pertaining to the public health.

The medical profession has not lived up to its opportunities and privileges, perhaps, in the matter of informing the public mind on questions pertaining to state medicine. This was due, no doubt, for the want of better medical organization throughout the state, for, coming along

with progress in this line, we note improvement and advancement on the part of the citizenship in all matters pertaining to the public health. The ends to be attained by such education are far reaching in their results. They encourage the intelligent cooperation of the laity with the profession in the suppression of disease and death in the land.

The value of medical organization is seen, again, in the comparative influence of physicians and medical societies in determining the scientific character of the profession. Medicine, in all the light of its modern phases is distinctly scientific, and its votaries are men and women of these qualifications and character, in contradistinction to an uneducated, unqualified, and unscientific coterie of laymen who, unworthily, aspire to the dignity of medical practitioners, and attempt to assume the duties of a trained and learned profession. Medical societies have for their objects the advancement of medical science, and the protection of their members and the public against such base practices. Hence, the inestimable value of medical organization in its influence of determining and maintaining the scientific character of its members, and of protecting its members and the public against such unjust impositions, can only be appreciated when we make a comparative study of the conditions as they actually exist.

That there is a great work before the profession to-day in bringing about some needed reforms, and in protecting the people against the hollow shams and mockeries that are being perpetrated upon a credulous public by the charlatanism of the day cannot be questioned. The medical organization, through its influence in disseminating medical knowledge and upholding ethical relations among its members, is the only way that these reforms can be brought about.

It was truly said in the bygone days of the last century by a well known educator that, "We must educate or we must perish." And this certainly applies to the conditions of the present century. Because of the toleration and the indifference on the part of the profession, because of our failure to properly educate the public mind, because of the lack of close professional ties, stronger bonds of fellowship, and broader sympathies among ourselves, we have seen spring up all around us unreasonable pretenders, irresponsible cults and irrational systems that have deceived the indiscriminating public by their sophistry and unwarrantable pretensions to skill.

There is but one way of entrance into the medical profession. There is but one avenue of approach to the legal profession, or the profession of the ministry. If any one desires to practice any phase of medicine, let him first qualify the same as every physician has done, and receive the doctor's degree in evidence of such qualifications from a reputable medical college authorized by law to confer such degrees. Then if he prefers to practice some side line, or pursue some phantom, or indulge in practicing some delusion, before the eyes of an informed and enlightened public on this subject it would not seem quite so inconsistent and reprehensible. It is evident that if all were made to conform to the medical requirements



and standards, no one would want to engage in the practice of these vagaries.

The fallacy lies in this: that these pseudo-systems take up a postulatory theory of medicine, and upon this mere assumption they attempt to formulate a rational system. Or, perhaps, they will take some abstract proposition in medicine, and from this single attribute they will try to evolve a system universal in its application.

In view of all this, I desire to lay special stress and emphasis on the possibilities of medical organization. Whenever the medical profession becomes thoroughly organized, whenever the men and women who are practicing legitimate medicine and surgery will give some of their time and talents in the interest of a closer affiliation, whenever the medical profession rises up as one man in the defense of their wrongs and in the demands of their rights, then, and not till then, will the profession triumph and be restored to its place of honor and esteem in the minds of a grateful people. Then will these "irregular" and "irrational" systems become at once obsolete, only to be remembered for their sophistry and guile. Then will the public discriminate between true men of scientific attainments, and those whose only presumptive evidence of professional ability lies in the display columns of the public press.

The importance of medical organization in the diffusion of medical knowledge, and the promotion of ethical relations among physicians, can never be estimated till the rank and file of the profession shall be united into one brotherhood, by kindred ties, and common aims and purposes in life. Then will the profession have power, and prestige, and preferment. Then shall this tide of deception that has swept over our land—this wave of imposition, with its half-truths, distorted truths, and its utter lack of truth—be rolled back, and the public mind that has been beclouded by these fallacies shall see in the light of a purer reason and a clearer view, what the medical profession through its scholarly attainments and scientific achievements has done for humanity, in alleviating her suffering, curing her ills, and in lengthening human life. Then shall the nations of the earth cry out in a single voice, shouting the praises of our profession. Then shall the nations of the earth vie with each other in doing homage to our profession. Then shall the nations of the earth rise up and call the medical profession blessed.

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## GASTRO-INTESTINAL DISORDERS OF INFANCY AND EARLY CHILDHOOD \*

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CHICAGO

The disorders of the gastro-intestinal tract of early life form a class of patients with which the physician comes constantly in contact. It is perhaps customary to speak of these disorders as summer complaints;

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but it is the experience of every practitioner that in winter as well as summer these cases form a considerable proportion of his cases. It is in the crowded centers of population that these occur more frequently. Here also are found the aggravated forms of the disorder. In the more isolated homes the cases are more amenable to treatment. This is perhaps in part because the patients are earlier brought to the attention of the physician and to the better hygiene that it is possible to maintain in the better class of homes.

There is a growing sentiment among pediatricians that these disorders are far less common than formerly. In the author's clinic the disorders of the digestive tract amounted to but 25 per cent. of all cases appearing during the summer of 1909. The health departments of the large cities show a decided decrease in the mortality during the first year of life during the heated term. This improvement is directly traceable to the publicity of the simpler rules of hygiene which have been sent broadcast by the various health authorities and charitable organizations. This has brought a demand for better and cleaner milk. There is now supplied in most of the large cities certified milk of a definite chemical formula and a bacteria count of less than 10,000. The prime etiologic factor is the ingestion of improper food; this may be improper as to quality, quantity, frequency of ingestion, physical condition of the food, or to its mode of preparation. Just at this time when the medical profession is having a profusion of infant-feeding fads bearing the brand of "Made in Germany" thrust upon them, it may be pertinent to enquire "What is the proper feeding of infants?" To this there can be but one answer: when possible mother's milk; when necessary to give an artificial diet it must conform to certain definite essentials. These essentials as given in Cotton's Diseases of Infancy and Childhood are:

1. The food must contain the different elements in about the same proportions as found in human milk, viz., proteids, 1 to 2 per cent.; fats, 3 to 4 per cent.; carbohydrates, 6 to 7 per cent.; salts, 2/10 per cent.; water, 88 per cent. This represents theoretically the ideal for a balanced nutrition. The chemist can readily produce a mixture which duplicates breast-milk in the nutritive value of its constituents and even resembles somewhat closely that emulsion in its physical appearance, but the dismal array of failures to reproduce mothers' milk by a synthetic arrangement of apparently similar constituents obtained from other sources, is an emphatic reminder of the limitations of both chemical and physiologic knowledge.

2. It should not be purely vegetable, but must contain a large proportion of animal matter. Most vegetable substances are deficient in available proteids and yield but a small quantity of fat. Moreover, it is known that the infant does not assimilate them as easily and fully as those derived from animal sources, even though these ingredients be supplied in the proper percentages.

3. It must be in a form suitable to infantile digestion. The digestive organs have only recently assumed their functions and are designed to deal solely with the bland, dilute and easily dissolved nutriment of mother's milk. In the natural method of feeding the infant gets his nourishment in the same form at every meal; so in artificial feeding variety is not desirable. It is presumed that infants under six months are unable to digest much starch from the paucity of ptyalin and amylase; hence, for this age any great amount of starch in a food is enough to condemn it. As the walls of the stomach are lacking in muscular power and the secretions are feeble, it is evident that this organ is unable to deal with

large masses of solid matter. Solids can be digested only in a state of minute subdivision.

4. The total quantity in twenty-four hours must represent the equivalent, in nutritive value, of from one to three pints of human milk, according to the infant's age. No fixed rule can be given for all children. Careful observation of the infant as to whether he rejects some of his food soon after ingestion, or seems hungry half an hour after feeding, may prove a guide. The best indication that he is receiving his full equivalent is a steady weekly gain of from two to five ounces, or more in the early months.

5. It must possess the antiscorbutic property. It is not yet known in what this consists. It is known that infants at the breast very rarely suffer from scurvy and that the disease is found among those fed on condensed or sterilized milk, or on desiccated preparations. Prompt recovery, with food unchanged (except the discontinuance of sterilization), has been reported by several observers. Fresh milk, therefore, possesses, in addition to the important principles, this antiscorbutic element, but not in large proportion, for milk in extreme dilution will not prevent the development of this disease.

6. It must be fresh, clean and free from excessive bacterial content. Hydrochloric acid has antiseptic properties, it is true, but the stomach secretes only a limited quantity of it during the first half year. Hence, infants are extremely susceptible to gastro-enteric disorders, having little resistance to bacterial invasion. The deadly toxins which develop in old milk may resist all efforts at sterilization.

What rôle do the elements play as etiologic factors in these disorders? There have been volumes written upon the effect of hot weather, how it lowers the vitality of the child, lessening its resistance, or how atmospheric conditions favor the development of bacteria harmful to the host. Be this as it may, it is the constant clinical experience to find that a few hot humid days greatly increase the number and severity of these conditions. In the literature, teething has also taken a prominent part as a factor in the etiology and the discussions still wage pro and con. That teething, by the constant irritation of the gums, does act as an important etiologic factor in many of these cases, there can be little doubt. Sudden changes in the temperature, either from heat to cold or cold to heat, have an important influence in the number of cases.

During the past few years there has been done an enormous amount of valuable scientific research work in the bacteriology of these diseases by Booker, Flexner, Duval, Bassett, Weaver and Cook, which gives promise of much light upon the subject; but as yet their results must be considered in the experimental stages.

The diagnosis must, as yet, be made anatomically, according to the region most involved; admitting, however, that symptomatically it is impossible to always differentiate between the various forms of summer complaint. One point brought out by Dr. Cotton in the *International Clinics* (Vol. II, Series 13) which throws much light upon many of these cases is that "the systemic disturbance which seems to be an expression of intoxication from the stomach and bowels varies widely as the diarrheal disorder locates with greater or less intensity upon this or that portion of the digestive tract. Apparently systemic disturbance diminishes proportionately with the distance from the stomach at which the burden of the disorder seems to fall. Thus in the most obstinate cases of colitis



with extensive lesions of the mucosa, nutrition is maintained to a remarkable degree, the child showing but little evidence of systemic intoxication, whereas a much less obstinate disorder of the small intestine may cause prostration with symptoms of general collapse. In other words, the more active the digestive area involved the more profound the constitutional disturbance and the greater the tendency to collapse."

A careful scrutiny of the bowel movements will show much light upon the conditions existing within the intestine. In all cases of diarrhea a large percentage of the bowel movements will show some mucus. The amount and constancy is a guide to the extent of the lesion. Mucus in large amounts may be found in all the movements of certain cases without an intestinal lesion; but in such cases there is usually a history of previous attacks and large quantities of mucus.

J. H. Mason Knox, in an article, "Character of Stools with Reference to the Intestinal Findings in the Diarrheal Affections of Infants," gives the following summary:

1. Mucus is evident to the naked eye in a large percentage of the diarrheal stools of infancy. Its absence renders the presence of serious intestinal lesion improbable. Mucus in large amounts may be found in the stools in all intestinal disorders, but the proportion of cases with extensive intestinal alteration is greater when the quantity of mucus is in considerable excess.

2. The appearance of blood in the diarrheal dejecta of infants suggests an alteration of the intestinal mucosa in proportion to the amount of blood present. On the other hand, extensive changes may occur in the bowel wall without the microscopic presence of blood in the discharges.

3. In like manner the presence of pus in the diarrheal stools of infants indicates, according to the quantity, alteration in the mucosa, particularly in that of the large bowel. The failure, however, to detect pus in the stools with the naked eye does not preclude the possibility of extensive intestinal lesion.

4. Blood and pus are more frequently found in the diarrheal movements in the middle half of infancy and these elements at this time form a correspondingly more reliable index of the conditions of the intestinal mucosa.

5. Blood and pus rarely appear in the diarrheal discharges of infancy before the beginning of the second week of their illness. They are more frequently found from the third to the sixth or eighth week, and are usually absent after that period, when the illness, if it continues, may assume a marantic character.

6. Blood and pus are often found mingled in the same stool. Less often blood appears alone, and still less frequently is pus noted in the dejecta of infants who have not passed blood.

The presence of these elements indicates the probability of thickening and infiltration or of ulceration of the mucosa of the small, but more certainly of the large intestine.

The classification as used in the author's clinic embraces the terms acute and chronic intestinal indigestion, gastro-enteritis, entero-colitis, acute ileo-colitis, simple colitis, cholera infantum, and amebic ileo-colitis.

*Acute Intestinal Indigestion.*—In these cases the onset may be either sudden or gradual. In cases with gradual onset the child is fretful or peevish for a day or two, awakening from a restless sleep with a sharp cry, often in terror, clinging to the mother as though frightened by a dream. This continues, with a gradual rise of temperature to 100 degrees

or 101 degrees, increased restlessness and peevishness, until the diarrhea unloads the intestine.

In cases with a sudden onset there is usually some gastric disturbance. The patient develops acute colicky pains, a rapid rise in temperature to from 103 degrees to 105 degrees, with a weak rapid pulse, marked prostration; the facies is that of a grave disorder. The pain is expressed by sharp, piercing cries, great restlessness, drawing up of the legs; or we may have as a first symptom a general convulsion that may be repeated at intervals. The cases in which convulsions appear are those usually of a neurotic heredity, or showing gross rachitic changes. The diarrhea soon follows, the bowel movements containing at first large amounts of fecal matter; the amount of fecal matter is sometimes enormous, especially so in artificially-fed children. The proportion of fecal matter to fluid becomes less and less as the diarrhea continues, becoming almost fluid in a few hours. There are usually four to twelve movements in twenty-four hours. These are first yellow, then yellowish green, then grass green in color, the change in color being due to biliverdin; their reaction is acid, of a foul or sour odor, the bowel movement containing undigested food, as curds of casein, lumps of fat, unchanged particles of starch, mucus, epithelial cells of cylindrical variety, and the bacteria usually found in feces.

The course and prognosis of these cases depends largely upon the previous condition of the child and the exciting cause. Usually upon unloading the bowel there is a gradual cessation of the symptoms, and convalescence takes place in a few days, if a rational diet is adhered to.

*Chronic Intestinal Indigestion.*—The chronic type of indigestion is usually preceded by a number of acute attacks. Many of the cases of acute intestinal indigestion occurring in the early summer develop a chronic condition which continues until the settled cold weather, regardless of the treatment. In these cases the stools are persistently abnormal, both as to character and frequency. The bowel movements are not very numerous, from four to six in twenty-four hours. They are large, thin, of a gray-green or brown color, of a disagreeable odor, persistently containing undigested food, and expelled with large amounts of flatus.

The bowel movements are usually passed without much pain; the stools are acid, irritating to the skin, and there is usually developed a marked intertrigo with excoriations; the appetite is capricious, the patient is thin, pale and anemic; there is often a constant decrease in the weight, in others there is a slight increase at times. The child is cross, hard to amuse, the sleep is restless, the child constantly tossing about, gritting the teeth and frequently crying out. The temperature is often subnormal, the surface cool, the tongue constantly coated, and the abdomen protuberant. These cases persist, with now and then an acute exacerbation, for months. In many cases the emaciation is extreme—the child literally starving to death.

*Gastro-enteritis.*—These include the great number of summer diarrheas of infancy, the so-called fermentative diarrheas. The onset in these cases usually follows an attack of acute intestinal indigestion. Remem-

bering that in acute intestinal indigestion we have, not a disease of the bowel, but a poisoning process going on in the bowel. We have the best of culture media in cows' milk at the body temperature, so that there rapidly develop micro-organisms which partly cause this condition. These cases begin with either a gradual or a sudden onset, the milder cases beginning with a gradual onset. For the first few days there are no symptoms other than those of an ordinary intestinal indigestion. These are the so-called "teething" diarrheas. The stools, however, become more and more frequent; they are thin, persistently green or tinged with green; their odor is foul or sour, the variation in odor being due to the diet, the albuminous decomposition making a foul odor and the fermentation of starch causing the sour odor. Mucus is present in increasing amount; the appetite is usually impaired, but a condition of great thirst exists, due to the rapid loss of water. The mother or nurse frequently misinterprets this thirst for hunger and puts the child frequently to the breast, thus adding to an already impaired digestion more food which acts as a foreign body, adding more fuel to the flame.

The tongue is coated, the mucous membrane of the mouth congested and covered with aphthous patches. The cases of sudden onset often begin with a convulsion; there is great restlessness; the prostration is great; far greater than that in cases of gradual onset; there is an early, rapid rise of temperature, often reaching 104 degrees or 105 degrees in a few hours. The skin is hot and dry, the fontanelle depressed, pulse rapid and weak; the patient lies in a dull stupor, or there may be great restlessness—all the symptoms indicating the onset of some serious disorder. Within a few hours there is vomiting, then diarrhea.

The diarrhea is explosive; the stools have a great amount of flatus, and number from twenty to thirty in twenty-four hours. The stools are yellowish gray or green or mixed in color. The clinical difference most manifest between gastro-enteritis and acute intestinal indigestion being in the persistence of the colicky pains, the amount of gas, the foul odor, the number of bowel movements, and the great amount of mucus, the microscope showing all the conditions found in acute intestinal indigestion with putrefactive bacteria. These cases always show marked nervous symptoms early, which often subside with the unloading of the bowel, this condition persisting for from five days to a week. In these cases which persist in the acute type for more than a week, there will usually develop meningeal symptoms, when convulsions may be frequent and a retracted or "bed-pan" abdomen may be found. In other cases there is marked tympanites. There is an early rapid loss of weight sometimes reaching two pounds in twenty-four hours.

*Acute Ileo-colitis, Dysentery.*—This usually follows entero-colitis, but may develop rapidly. The onset is acute. There is a high temperature, rapid pulse, rapid loss of weight and strength; the bowel movements from ten to twenty per day. There is marked tenesmus both before, during and following the bowel movement: A constant straining to have a bowel movement. The discharges contain mucus, blood, shreds, and sometimes pus. The bowel movements often assume a jelly-like consistency. There



is very little odor; the color and consistency are variable. The abdomen is distended, tympanitic, often tender, and prolapse of the anus is common, the discharges causing intertrigo of buttocks and thighs. The number of cases in which a bacillus resembling the Shiga bacillus is found varies greatly in different parts of the country. The bacillus is commonly found on the Atlantic Coast, but in the interior it has not been so frequently demonstrated. A prominent symptom is abdominal pain. The duration is variable; the blood usually disappears from the stools in about a week. With the disappearance of blood from the stools there is usually a gradual change for the better, the bowel movements become lessened in number, and a general clearing up of all symptoms, except for the appearance of the mucus in the stools which persists for an indefinite time. The temperature chart shows a gradual lysis from the second day.

*Cholera Infantum.*—The onset of cholera infantum usually follows some form of digestive disturbance. After a variable period of restlessness the infant begins to vomit, the vomiting being accompanied by a profuse diarrhea. The vomitus and bowel movements are watery; they are odorless, and consist of serum, epithelial cells and bacteria. It may run its course in twenty-four or forty-eight hours, death supervening. The rectal temperature is high, the extremities cold, the skin cyanotic, the face pinched, the pulse weak and rapid, respiration shallow, or may take on a Cheyne-Stokes type. Thirst is one of the prominent symptoms; the abdomen is soft, usually retracted; the eyes sunken; loss of weight rapid and extreme; the nervous symptoms are grave, the child lying constantly moaning, with continual rolling of the head. The child may lie in a stupor with relaxation of all the muscles, the sphincter often being relaxed so that there is a constant oozing from the anus. These symptoms go on to coma or convulsions, respiration becomes weaker and irregular, finally almost imperceptible; very little urine is passed on account of the great amount of water lost through the bowel movements. This seems to be a self-limited disease. For children surviving seventy-two to ninety-six hours, the prognosis is fair. There is apparent a manifest tendency to diagnose any severe case of summer diarrhea in infancy as cholera infantum. This is to be deprecated, as in cholera infantum we have a definite clinical picture that is only too clearly differentiated from the other types. Where a careful diagnosis is made, the cases of cholera infantum are exceedingly rare, many of our most competent observers reporting that they have never seen more than one or two cases.

*Amebic Ileo-colitis.*—This form of ileo-colitis is very rare in children. The duration is very chronic. The diagnosis can only be made by the microscope.

*Enterocolitis.*—The term entero-colitis is used to designate the class of cases which have a corresponding symptomatology as gastro-enteritis, except that there is no recurrence of the vomiting.

*Simple Colitis.*—Simple colitis is used to designate those cases simulating the acute ileo-colitis, with very frequent small inoffensive stools which may be evacuated after considerable straining in small amounts,

perhaps not more than a drachm. These cases are subacute, and usually follow an acute indigestion; they tend to a protracted course with little emaciation, have a low temperature chart and the vitality is maintained to a remarkable degree.

*Treatment.*—These are preventable diseases. The proper treatment is in the prevention of the condition. That it is possible to prevent all of such diseases is beyond the imagination of the most sanguine. The lack of fresh air and sunshine in the poor districts should be supplied by the building of model tenements. That the large majority of these cases occur among the artificially-fed children should give emphasis to the necessity for mothers to nurse their offspring. The tendency of the physician to feel that it is possible to properly nourish these children with other than the natural aliment has been, and is, a great factor in the number of babies that are deprived of their proper food. There should be the same care exercised to modify the mother to make her capable of suckling her child as is used in the selection of an inferior food. It is not probable that every mother is capable of nursing her infant, but it is a fact that a great number of mothers are encouraged by the physician's attitude to wean their babes, when a little timely advice would supply the babes with their inheritance by right. Mother's milk is the best food for babies. There is no other food that can take the place of it. Every child fed upon artificial food shows one or more signs of rickets. It is notorious that all artificially-fed children are prone to diseases of the digestive tract.

The hygiene of infancy is neglected. The mother is not instructed in the simplest rules of hygiene. Through ignorance they do not protect the child from contaminations that may be of harm to the child. The need of boiling and airing the napkins; the removal of soiled clothes from the living apartments as soon as soiled; the harm of drying wet napkins over the kitchen range. That instinct is not a safe guide in the care of infants by their mothers is true, regardless of analogy with the lower animals. Irregularity of feeding is a prolific cause. The physiologic law that any function must have an interval of rest after exercise must be obeyed in the feeding of infants as well as in other conditions. Children are naturally gluttons, and all articles handled by them are usually brought to the mouth, so ordinary care should be taken to see that playthings are as sterile as possible. The persons of the children should be kept clean. There is no contraindication to the daily bath. In the crowded centers the children should be taken to the country when possible during the heated term, or should have the benefit of frequent outings in the parks. If these trips are impossible the baby should be kept in the open air as much of the day as possible, avoiding only the direct rays of the sun. The amount of food taken should be diminished; regularity of feeding insisted upon. This is true of the naturally as well as the artificially-fed child. Breast-fed children should not be weaned during the summer except for causes which make it imperative to wean.

Fruit is a frequently-assigned cause as the exciting factor in acute indigestion. The fruit sold in these districts is usually unwholesome.

The banana is more commonly given to the child because it is cheap, easy to prepare, and is considered a good food. The use of the banana should be restricted to children of six years and older. This is because of the manner of eating; the child does not masticate, but simply breaks off a piece and swallows it. The musculature of the stomach is not sufficiently developed to enable it to break up this mass and mix it with the digestive juices. Older infants and young children may be given bananas if they are first pressed through a fruit sieve.

Pure, fresh cow's milk is the greatest desideratum of the city child. Every effort should be made to supply the child with a wholesome milk. It has been amply demonstrated in several cities that it is practical to have a good quality of milk supplied by the dairymen. The physicians of every community should see that there is a reliable milk on the market. This has been done in many communities by the organization of a milk commission.

Two agencies that should have the unqualified support of every physician are:

1. The supplying of infants with a guaranteed cow's milk.
2. A well-regulated wet-nurse establishment.

In the treatment of summer diarrheas there appear five indications:

1. Stop all food.
2. Remove the cause.
3. Rest the affected part.
4. Allay thirst by giving cold water in small amounts at frequent intervals.

5. Keep the surface temperature as nearly normal as possible—where the skin is cool, apply heat; to a hot, dry skin, cool sponging. Stop all food for twenty-four hours or longer. This is indicated in all cases, regardless of the apparent mildness of the emaciation or exhaustion of the patient. During this twenty-four hours give copious amounts of cold water. A weak cereal solution may take the place of plain water where it is difficult to have all food stopped. The initial medicinal treatment is one-tenth grain doses of calomel given every hour for six doses, followed by a drachm dose of castor oil. This should be enough to practically empty the stomach and small intestine. Where it is possible to have the instructions intelligently followed, colonic flushing is ordered. The instructions given to the mother are, the child to lie on the mother's lap or bed, with legs and thighs flexed. A No. 14 French soft rubber catheter is attached to a fountain syringe; the catheter is well oiled with warm sweet oil, and inserted about one inch into the rectum, when the water is turned on. The catheter is then to be wormed into the gut. The fountain of the syringe should never be more than two feet higher than the buttocks of the child. The injection ordinarily used is tepid, but in competent hands the temperature may be lowered to reduce hyperpyrexia; this can only be recommended when the flushing is done by competent observers. Plain sterile water may be used, but in many cases there is an advantage in the use of weak alkaline or of normal saline solutions. The



amount used for each injection is from two to six pints, or sufficient to cleanse the bowel so that only clear water returns. Following the initial medicinal treatment it is advisable to use a laxative for a few days; for this, the aromatic syrup of rhubarb is frequently indicated, because of the so-called after-constipating effect of the contained tannic acid; the aromatics are antiseptic and the drug is usually well borne. The giving of large doses of bismuth preparations should not be done as routine treatment; it is only in marked hyperperistalsis, or in repeated vomiting, that the indication for use of bismuth salts is met. The coating of the gastric mucous membrane with bismuth occludes the peptic glands, and where the gastric secretion is already impaired their use but further interferes with digestion. After the first twenty-four hours a thin gruel or an egg-albumin solution may be given. These must be given in small amounts, and the amounts slowly increased as the ability to digest increases. We err most frequently by over-feeding. We must make haste slowly. The diet during the continuance of the diarrhea consists of dilute rice, barley, or oatmeal gruels, expressed beef juice, raw eggs, broths (preferably containing cereal), bacon fat and baked potatoes. It is best to omit milk from the diet as long as the diarrhea continues. In feeding during this interval it is imperative that the food value of the foods taken be known. It is quite possible to give an insufficient amount as well as an over amount at such a time. To guard against this the cereal and albumin solutions should have fixed proportions that their value may be known. Broths have no nutritive value except by the addition of a cereal. In the restoring of a milk diet, the milk must be added gradually to the diet, and it is often advantageous to digest or partially digest the milk for a few days—gradually reducing the length of time the peptonizing process is carried on—this decrease from day to day, as the child's ability to digest increases. It is usually possible to stop the peptonizing by the end of the week. In breast-fed children there is an earlier return to milk, but the process should be gradual, giving the breast for but a few minutes and gauging the length of the interval by the ability to retain the milk.

The use of alcohol and opium may be necessary at times. They should never be used as routine practice. The indication for the use of opium is not in the frequency of the bowel movements, but in the pain and tenesmus, and should be given as a high colonic injection of one minim in an ounce or two of starch water for a child one year of age.

The pain and tenesmus can usually be controlled by the use of carminatives and local heat, or a thin mustard paste, made with the white of egg.

The use of intestinal antiseptics is usually not indicated, and is frequently harmful by being irritating to the mucous membrane of the *prima via*.

#### DISCUSSION

DR. EMERSON M. BREWER, Rantoul: I have only a few words to say in regard to the gastrointestinal disturbances of children. We had in the neighborhood of Rantoul last fall, as you possibly remember, an epidemic of poliomyelitis following intestinal disturbances. I fortunately or unfortunately was in the midst of this epidemic. I had myself fourteen cases out of the twenty-seven or

twenty-eight we had in the district reaching from Potomac, Illinois, to Leroy. Invariably in all of these cases the digestion and alimentary tract were more or less affected before the poliomyelitis came on, and in discussing this matter **pro** and **con** with the state board of health, which sent representatives there to look after this epidemic, we agreed in general that the epidemic was due more or less to intestinal disturbances, created more possibly by infection taken into the stomach and bowels than by anything else. The ages of the children ranged from six weeks, the youngest, to fourteen years of age, the oldest. Among the children, some had paralysis, while others did not have it. Invariably in all these cases we had infection of the bowel; we had catarrhal conditions of the stomach and bowel, like diarrhea, sometimes followed by constipation, but invariably constipation and indigestion. The trouble came on in the first case on the fourth day of July; the last one in the latter part of September or maybe October. Of the fourteen cases I had all recovered except one, which is paralyzed at present.

DR. H. W. CHENEY, Chicago: I desire to emphasize one of the points which Dr. Van Derslice brought out in his paper, and that is the question of over-feeding as a potent cause for the gastrointestinal diseases of children. By that I mean the ingestion or giving to these children more food than they need or more than they ought to have. I think we will find, as we study these cases more, that over-feeding perhaps is as much a cause as is the feeding of sour milk or milk that has been infected or feeding them on other improper food. These children may go along all right on a proper mixture of whole milk, which is the right strength for them, and yet they may be receiving too much food to gain in weight. If we follow the rule of some of the German investigators, we will not feed these babies under six months more than forty-five calories per pound, and we will find that the weight of the child is a better criterion to go by than the age of the child. We may have a child a year old who weighs only eight pounds, yet if we feed the child according to the year-old formulas we will fall into the error of making the child sick on proper food, because over-feeding will poison the child as quickly as to feed it infected food. That is one of the reasons, too, why the intestinal diseases are more frequent in the hot days because these children do not need so much of the heat-forming elements. They do not need so many calories in the food and during the hot days in summer the trouble is not always due to souring of the milk, but to the fact that we feed these children more than they need and more than they can take. We cure them by stopping the food or by reducing the number of calories they have been getting. If we manage these cases properly they will need very little medicine after the initial dose of castor oil or other laxative. Give that dose in the beginning; give barley water for twenty-four hours and gradually go back to the proper mixture.

DR. J. W. VAN DERSLICE, Oak Park (closing the discussion): The report of the epidemic is exceedingly interesting. The severe epidemics which have occurred in this country during the past few years have left a decided impression that this is a specific infectious disease. This has been brought out during the Nebraska epidemic, where the complete isolation of all the patients had the effect of stopping the epidemic immediately.

In reference to the use of caloric feeding it is necessary to remember that the mensuration of food by means of calories is merely to be used as a check against both over- and under-feeding. The adherents to this method have said that you must not feed more than forty-five calories to the pound of the body-weight, that interpreted into ounces means that one must not give more than two and a quarter ounces of good breast or bovine milk to each pound of body weight in twenty-four hours. I can in the main agree with this as it is but rarely that one can find an infant that will take this amount per day. I am not an exponent of the popular fad of overfeeding as the common cause of all our digestive troubles during infancy. In my experience the child that is brought to the physician for these various disorders is usually fed on some mixture or other which, when measured up into calories, it is found that it would be neces-

sary to feed the child gallons of the same before the limit of 45 calories per pound would be reached. If we take a normal-weight baby at six months of age, this infant weighs about 16 pounds, that would give as the maximum amount of food 36 ounces of pure cow's milk in the twenty-four hours or six feedings of 6 ounces each, which one can readily see is about the same standard that has been used for generations before the importation of the latest German method. I do not wish to be understood as opposing overfeeding as a cause for indigestion as there is no doubt a definite clinical picture which we find in some infants which is entirely due to this cause. But I do maintain that the great majority of our cases are found in the underfed, rather than the overfed. How many of these cases have each of us seen where the child is brought in on the end of a long tube-bottle and find the child is being given one or two teaspoons of condensed milk, diluted with 6 or 8 ounces of water. That to me is the more typical case. Most of us were graduated before the caloric method of feeding came into vogue and by reason of this we are not adepts at transposing food values into calories, but few general practitioners know the food value of any of the foods which are given. Children are fed arbitrarily and for this reason the caloric method is a distinct advance as the doctor is now taught the theoretical food value and can measure up the values in a given food far better than formerly. I would leave this word with you: Learn the food value of the few foods which you are commonly using and only use a few foods, but learn their definite use and limitations.

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### SKULL FRACTURE \*

F. C. SCHURMEIER, M.S., M.D.

ELGIN, ILL.

The purpose of this paper is not to discuss the different kinds of skull fracture; the various kinds of intracranial lesions caused by them, and their treatment; but rather some points which the cases I desire to report bring into question.

Out of a series of ten cases that have come under my observation in practice, I desire to report a few that appealed to me as being of interest. Excepting a few pioneers in this field, surgery of the skull has until recent years been looked on with grave apprehensions. The fear of jeopardizing life had so fastened itself on the surgeons generally, that the cranium with its contents was regarded a *noli me tangere* in its literal sense. The reasons for this apparent timidity among the rank and file we need not seek far to find. Time and space forbid their discussion here. Indeed trephining in a crude way was practiced in prehistoric times as a sort of panacea for those supposed to be possessed of the evil spirit. Although historically interesting, and at times entertaining, especially when depicted by the pen of the novelist, the scientific mind finds little comfort in the early traditions, which betray little anatomic and physiologic knowledge of this and correlated subjects.

Skull fracture, however, seems to have been a bone of contention for centuries back of the recent past. The pendulum has later swung several times back and forth between ultra conservatism and the radical treat-

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ment of skull fracture. The advent of asepsis and antiseptics has opened new vistas for surgical possibilities, for it was not until then that surgical thought was effectively directed to acquire scientific acumen for the interpretation of pathologic phenomena, and to determine the proper antidote. Surgery had a new birth, and with it came inspiration for the betterment of this heretofore chaotic and uninviting field of surgical endeavor.

Diagnosis: As a general proposition, it is doubtless correct that clinically hemorrhage elsewhere in the body permits of no comparison with intracranial bleeding, because in the latter we observe indirect effects, whereas hemorrhage in an open and dilatable space gives the symptoms directly referable to the initial cause. Usually the loss of blood in skull fracture is insignificant, but the mischief done by pressure of even a few drops of blood is sometimes considerable and not infrequently fatal. Symptoms of skull fracture may not be pronounced, save in the terminal aspect. Indeed so slow may be the development of pressure signs, that the suspicion of hemorrhage would arise but late. Permit me to report the following case in point:

CASE 1.—H. S., male, aged 45 years, laborer, while walking home from work, fell, striking his head on a stone curbing. Conscious, but feeling a trifle dizzy, he refused assistance from his fellow-workmen, but consulted a near-by doctor, and then walked home, a distance of eight city blocks. He complained to his mother of headache and slight visual disturbance, but objected to her calling in a surgeon. He sat at the table to eat his lunch, which he seemed to relish as usual. Following his usual custom, he conversed a long while with his mother, who, however, was ill at ease because of her son's peculiar breathing. She enjoined him to call a doctor. He again objected, stating that he had seen a doctor, who advised him to go home and "sleep it off," an advice based on the erroneous conclusion that because the patient had liquor on his breath he had probably worshipped too freely at the altar of Bacchus. I saw the patient about three hours after the accident. He was lying on his bed, unconscious, pulse 60, respiration stertorous, left pupil dilated. His mother stated that about ten minutes before my arrival patient was conscious and drank some water. Removing a gauze dressing from his head, I discovered a perforated scalp wound, the size of a dime, over the right lower temporal ridge, slightly bleeding. I diagnosed skull fracture and ordered patient removed to a hospital, but life expired a few moments later.

The case came to autopsy with the following findings: Scalp wound as already described; fracture line began 2 inches from point of contact, extending toward the juncture of lambdoid with sagittal suture, following left lambdoid suture a short distance, then crossing into occipital bone, ending behind the mastoid. The lateral sinus was injured. A large epidural clot below fracture line in left posterior fossa.

Points of interest: Mistaken diagnosis. Patient was conscious until shortly before death; walked a long distance after the accident; fracture line far removed from point of contact. From the post-mortem findings it seems that if the true condition had been recognized, an early surgical attempt to save the patient's life might have been successful.

The absence of motor disturbance and the fact that locomotion is possible during active intracranial hemorrhage serve only to deceive. They have little negative diagnostic value in the early hours after the injury. Loss of consciousness, if the time of its advent is known, is probably the most valuable single sign. If in a few moments conscious-

ness is regained, only to relapse into unconsciousness or coma, we have the unmistakable sign of hemorrhage. Unconsciousness from concussion is immediate. When consciousness is regained, there is no relapse. Complete coma points to basilar fracture. Causes of partial or total unconsciousness or coma, other than pressure and cerebral shock, such as alcoholic and uremic coma, apoplexy and opium poisoning, need only be mentioned here. However, be it said that the odor of alcohol on patient's breath has led to error temporarily, and I have witnessed it several times myself, while serving in the capacity of city physician. In coma from alcohol pupils are equal, irritation on the face causes pupils to dilate and contract rather quickly in succession. There is no paralysis. Apoplexy may cause some difficulty in diagnosis. Here we have the slow pulse, irregular breathing, and complete coma with paralysis. Marks of violence are generally absent.

Fracture of the petrous portion of the temporal bone may cause bleeding from the ear if the drum is ruptured or from the corresponding side of the nasopharynx through the Eustachian tube. Fracture involving the frontal sinus and not extending into the base may cause hemorrhage from nostril, but will issue from beneath the middle turbinate through the infundibulum. I believe this to be of sufficient importance to merit close inspection to find the source of the nasal hemorrhage, for it may be of some value in pointing out the difference between a basilar and a non-basilar fracture, in cases where the nose is the only visible point of bleeding. In one of the cases which I shall report did this condition obtain. In lesions of brain centers, we expect disturbance of function in the side opposite to the injury. Where there is fracture of the vault with paralysis on the same side, then there is a basilar lesion, probably by extension.

For the history of the following case I am indebted to my colleague, Dr. Tobin, with whom I saw the patient shortly after the injury. Patient, a girl, age 8 years, while in an accident sustained a blow to the forehead. Patient was unconscious, hemorrhage from the left nostril, a substance having the appearance of brain matter issued from the nose; a slight bruise on the forehead to the left of the median line; left pupil dilated; left-sided hemiplegia developing on the second day; temperature irregular, between 99 and 100.2; pulse irregular, 92 to 108; convulsions lasting one-half hour soon after injury; incontinence.

*Operation.*—Trepine over frontal bone near site of contact; considerable diploic hemorrhage, controlled by pressure; fracture line extending toward left eyebrow and to the frontal sinus; slight depression of inner table at point of contact. Button was not replaced, and a catgut drain placed subdurally. The paralysis gradually cleared up, consciousness was not complete until end of second week, sphincter control was not regained until twelfth day. Patient made a good recovery.

In this case we note the late development of paralysis on the same side as the injury, indicating pressure from hemorrhage at the base, the clot being slowly absorbed, as the gradual disappearance of the hemiplegia indicated.

Abrasion and swelling on the scalp are significant and in the absence of a palpable depression or an abrupt non-vanishing ridge under gentle pressure, it must be borne in mind that a fracture may be present,

although considerably far removed from the external lesion; a fact we would remember when palpating the head carefully to discover places of tenderness and pain, which are generally found along fracture lines in a conscious patient. Pulse may be below or above normal in frequency. Temperature may rise early, and when it reaches a very high degree a fatal issue is pending. Respiration may be variable; when it becomes stertorous together with a slow pulse, it points to pressure at the base, posterior.

Treatment: In the cases which admit of some question as to diagnosis and especially those where external marks of violence are present, there is still some doubt in the minds of not a few among the rank and file whether or not the patient should have the benefit of that doubt by making an exploratory incision. As a defence of such practice the argument is that this procedure would entail little or no additional risk to the life of the patient, and that it is sometimes the *sine qua non* that leads to a correct diagnosis and the saving of life for its reward. Surgeons to-day rather wait for some definite sign or symptom, indicating intracranial mischief, to develop, inasmuch as skull fracture *per se* is not considered a surgical indication.

The skull cap and ice pack have been much in evidence in the past and the surgeon among the rank and file found comfort in the belief that by these measures the best was being done for his patient and that the development of symptoms for better or worse must be carefully observed. This conservative treatment applies to-day to some cases and especially to fractures of the base.

When the diagnosis of fracture with compression either from hemorrhage or from depressed bone, is made, surgical intervention should begin at once. The earlier the operation, the less damage to the cranial contents from pressure and inflammatory process. Not only is the chance for recovery better after an early operation, but more lives will doubtless be saved, and the traumatic effects such as epilepsy, cephalalgia and other nervous phenomena will follow less frequently. In reading some of the literature on this subject it appears to me that the early operation is many times more successful than a deferred operation, calculated to correct a bony depression, or to remove the products resulting from the failure of Nature to absorb a clot or to renew mutilated or destroyed intracranial tissue.

It is the common experience among surgeons that sometimes the most hopeless cases will recover under heroic treatment, and therefore it is morally never too late to operate, although clinically it may seem useless, and we fail in the attempt to save life. The operation should not stop short of efficiency when the patient's life threatens to cease. Naturally the surgeon dislikes to have the patient die under the knife and the temptation may be strong to terminate operative procedure and hurry him off to bed to die.

The following case, which was the incentive to the writing of this paper, will illustrate these points:



S. W., male, aged 16 years, while skating tandem on the river at night, collided with an approaching party, and was thrown violently on his head. I saw the patient within twenty minutes after the accident. He was semiconscious, profuse perspiration, pulse 78, temperature 100 in axilla, respiration normal, pupils unequally dilated, hemorrhage from left nostril, which during a later examination was found to issue from beneath the middle turbinate through the infundibulum. There was no paralysis of the limbs which the patient moved freely, nor did this sign develop later. The soft parts were not injured. We found an area of depression, extending from a point  $1\frac{1}{2}$  inches above the left eyebrow and  $1\frac{1}{2}$  inches in width, to beyond the lambdoid suture, where it was approximately 3 inches wide, involving a part of the frontal, nearly all of the parietal and part of the occipital bones. Patient soon became noisy and violent, so that restraint was necessary. He was removed to St. Joseph's Hospital and prepared for the operation. Immediately before the operation the temperature had risen to 104.5 in axilla, pulse 130, unconscious, but no paralysis. Only a few whiffs of chloroform were required. A large horse-shoe incision, keeping within the hair line anteriorly for cosmetic effect, was made. The flap was turned down sufficiently to expose the lower temporal ridge. Two pieces of bone, each  $2\frac{1}{2}$  by 5 centimeters were cut out with chisel, one at a point over the lower temporal ridge close to the coronal suture, and the other was cut out a little superior and posterior to the former defect and near the margin of the depression, and were not replaced. These points were chosen because they seemed most advantageous for the reduction of the depression. A large quantity of clotted blood, a very considerable amount of brain substance, its coverings and cerebrospinal fluid issued from these openings as the depressed pieces were being elevated by means of a blunt instrument and the fingers. Hemorrhage was troublesome. A large stream of venous blood issued from the direction of the longitudinal sinus nearly opposite the posterior opening. Plain sterile strip gauze packing against the falx cerebri hugging close to the bone controlled the hemorrhage effectively. The end of the gauze packing was drawn through the posterior bone defect. The anterior meningeal artery was ligated; diploic hemorrhage controlled by rubbing the edges with a blunt instrument. Hot normal saline was allowed to run in to clean out all loose tissue and clots and stop capillary bleeding. Placing the gauze packing against the falx cerebri was a matter of expediency in this case to control the hemorrhage. The loss of brain substance and the much-depressed condition of the brain created a considerable cavity and could be readily seen through the openings made. Just posterior to the Rolandic area was a cone-shaped hole, its base approximately the size of a silver quarter, tapering rather abruptly in the direction of the lateral ventricle. Over the motor area its upper and middle third presented here and there a small projection of cortical substance, otherwise the brain substance was very considerably mutilated and much of it lost, as well as a large part of the brain covering.

Plain gauze drains were placed through the anterior and posterior bone defects, skin flap was replaced, sutured with silk-worm gut, copious dressings and a plaster cast applied.

While making the bone defects the patient was apparently dying, there being no radial pulse, and respiration was almost imperceptible; also considerable cyanosis. It seemed useless to continue the operation. Soon after the first gush of pent-up blood, the condition of the patient began to improve a trifle. During operation saline hyodermoclysis was instituted and repeated two hours later.

Remarks: Patient is right-handed. The injury was over the left hemisphere. The absence of paralysis is remarkable inasmuch as the depressed bones covered nearly the entire motor area. The absence of permanent traumatic effects is remarkable in view of the fact that such a large area of supposed highly functioning brain matter and its coverings was lost. Discharge of cerebrospinal fluid at first profuse, gradually diminished in quantity, and ceased flowing on the twentieth day after

the operation. Immediately after the operation the temperature in axilla was 103. Four hours after operation, temperature in axilla 99.1, pulse 128. Ten hours after operation, temperature in axilla 98, pulse 88. On the second day, temperature by mouth 100, pulse 78. On the third day, temperature, pulse and respiration were normal. During the first twenty-four hours after the operation the patient was very violent and noisy. Consciousness was regained on the second day after the operation. The anterior drain was removed on the fifth day. Posterior drain was removed



Fig. 1.—S. W. Dotted line indicates area of depression. Large horse-shoe flap turned down exposing the sites for trephining. Two bone defects near the margin of depression as indicated were made with hammer and chisel.

on the eighth day. Plaster cast, through which openings were made over the wound and through which the dressings were changed several times during the first thirty-six hours, was removed on the tenth day. On the second day after the operation the patient complained of pain in and about the left eye. There was slight discoloration over the left frontal sinus. The patient made an uneventful recovery.

Making the bone defects near the depression has some advantages worth considering. In the case reported, there was no difficulty in reducing the fracture through the openings made. It was possible by fre-

quently shifting the point of internal pressure, not raising too much at one time, to bring the several pieces uniformly into position without undue disturbance to alignment. By inserting the index finger through the bone defects, the under surface as well as the cranial contents could be palpated to a very considerable extent, to eliminate all error in reduction and to detect and remove foreign matter. It seems reasonable that the less disturbance to the bone fragments during reduction, the less likely will there follow bone necrosis. Again drainage can be established to better advantage and hernia is less likely to occur.

Examination of the patient two years and four months after the operation, we observe the following: No visible scar, which is concealed by a luxuriant growth of hair. No deformity except the anterior defect in bone, which had not entirely closed. The posterior defect remains nearly the original size. It is probable that the bone in the anterior defect reformed from the dura mater. Pringle of Glasgow calls attention to the fact that the dura mater may produce new bone if the patient is young. Goetz has recorded a case where a defect in skull measuring 8.5 by 5.5 centimeters was completely covered in, being regenerated in this way. It is rare for this to happen. There is no cerebral hernia; no headache; no epileptic seizures or other nervous phenomena. Patient has not since the operation, by lack of power in brain or brawn, betrayed this awful ordeal.

#### CONCLUSIONS

1. Injuries to the head are never too insignificant for a most careful and painstaking examination.
2. Where there is suspicion of intracranial trouble, the patient should be kept under the eye of a competent observer.
3. When the diagnosis of intracranial pressure is made, operation should begin at once, if the seat of trouble is surgically accessible.
4. It is never too late to operate even though clinically it seems useless, and we fail in the attempt to save life.
5. Operation should not stop short of efficiency when patient's life threatens to cease. (Author here exhibited patient, S. W., and a drawing, Fig. 1.)

17 Douglas Avenue.

#### DISCUSSION

Dr. Coleman G. Buford, Chicago:—I have not heard at this meeting a paper which will prove of more value than this particular contribution. Having worked largely among individuals suffering from brain diseases, and having intended to do only neurologic surgery in the beginning of my practice, and having had a very large experience as an assistant to Dr. Fenger in connection with brain surgery, I feel that I can appreciate this paper more than the average practitioner. I want to say, I am absolutely certain that the diseases and injuries of the skull are such that their treatment by surgical measures is in its infancy. We are often discouraged because our cases of tumor of the brain and our cases of epilepsy which have been turned over to the surgeon are not cured by the surgeon. We must remember that some brain tumors have been and can be successfully removed. We must remember, too, that in those cases where the tumors are not successfully removed, a decompression operation will relieve these patients of an



immense amount of suffering. Let us grant that the surgery of tumors and of epilepsy has not given the brilliant results we hoped for, but we must admit that the surgery for traumatisms of the skull and the surgery of the blood-vessels, such as aneurysms and apoplexy and Little's disease, is giving us really brilliant results. In the traumatisms of the skull, I am certain that surgeons are not opening the skull often enough and early enough.

Dr. Cassius C. Rogers, Chicago:—This paper is interesting to me. I have seen the case and the result of the beautiful work of Dr. Schurmeier, although the result obtained in this case is not different from the results that could be obtained throughout this country if this operation is done in time and performed under strict antiseptic precautions and carried to the limit, as was done in this case. I have operated on dozens and dozens of injuries of the skull with a high death-rate, but with results just as good as we get in other operations when delay has been the rule. The doctor who spoke last (Dr. Buford) stated that the results we get from operating on these cases are discouraging. They are discouraging because we get these cases after the internal medical man has had them and expects them to die sometime for days, and being disappointed, he advises operation, which frequently relieves his suspense. Brain tumors, brain abscesses, etc., which have existed as long as twelve years, have not been correctly diagnosed, and these cases have been treated for gumma of the brain and almost everything else except brain abscess. I would like to quote MacEwen in these cases as saying "that nearly all of them are diagnosed as gumma of the brain, and if they do not improve under three weeks' syphilitic treatment, then the pathologic condition should be regarded as some other than gumma. That gumma of the brain will yield in three weeks' antisyphilitic treatment if it is going to yield at all." Otherwise the case should be operated on. Every case of depressed compound fracture of the skull, as well as every case of depressed fracture, should be operated on at once. Every patient that is unconscious, who regains consciousness, and lapses into unconsciousness again, should be operated on. At any rate, the case should be regarded as surgical first, last and all the time, and the practitioner who tries to treat these patients by the administration of medicine internally is taking a risk greater than is justifiable.

In fractures of the base of the skull the head should be immobilized by applying a cast including the head and shoulders.

[The discussion was here terminated by the chair calling time to adjourn for the noon hour.]

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## SYMPTOMS AND TREATMENT OF EXOPHTHALMIC GOITER\*

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CHICAGO

Mr. President, members of the Illinois Medical Society: I have chosen for my subject a condition that is more prevalent in females than in males, and one of which there has been of late years a great deal of discussion in regard to the treatment. It is claimed by some that exophthalmic goiter should always be considered a medical disease and be treated by internal medication, others claiming that exophthalmic goiter is a surgical disease and should be treated by partial or complete extirpation of

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the gland. Experience has convinced me that neither theory is correct. It is unquestionably true that all cases of exophthalmic goiter are at times purely medical. It is equally true at other times that cases of exophthalmic goiter should be considered as surgical and operated upon.

In this paper I do not wish to discuss the technic of the operation, which is simple and well known to all surgeons, the time requiring about twenty minutes in the average case. I wish to present my views as to when cases of exophthalmic goiter should be considered medical and when surgical and the results I have obtained.

During the acute attack of exophthalmos or iodism, only in extreme cases should operative interference be considered. The mortality following enucleation of the gland during the acute symptoms is high and the patient is in no condition to take care of the additional toxins that are liberated at the time of the operation, due, perhaps, to the traumatism and hyperemia that is produced in and around the field of operation. At the beginning of the attack and during the attack we should never operate, nor should we operate too soon after the recovery. If, however, death seems imminent, and we are satisfied the patient cannot be improved under medical care, we are sometimes justified in ligating the superior thyroidal arteries under local anesthesia, thus cutting off the principal blood supply and decreasing the formation of toxins.

There is another stage in exophthalmic goiter, when operating is not indicated, and that is the stage a great many of these cases have reached before they are brought to the surgeon for interference. After a case has been treated for repeated attacks of acute thyroidism, and has all the symptoms and signs of far advanced, pathologic changes of the heart and blood-vessels and the patient is in a morbid condition, surgical interference should be refused. Exophthalmic goiter is surgical from choice. We are told by men with great experience that a patient may have exophthalmos, recover, and never suffer the second attack, but in my experience that is not the rule.

After patients suffer one attack of acute thyroidism, they usually have repeated attacks at stated intervals. These intervals may be a few months apart, or they may be many months apart, but each attack is, as a rule, more severe than the preceding one. This being true, it is my opinion that exophthalmic goiter should be considered a surgical disease, if the patient has suffered two attacks of acute thyroidism, and the operation should be performed as soon after the second attack as the patient is found to be recovered from the effects of the toxemia. That is, six or seven weeks after all symptoms have disappeared.

*Treatment.*—The mode of treating acute cases has caused much discussion, and a great deal of experimental work has been done along this line in recent years. The serum treatment, the administration of anti-thyroidin, ridogen and thyroidectin, as well as the use of the x-ray and high-frequency currents, have had their strong advocates. I have used all and have derived about equal benefit from all, but all that I have been

able to obtain is temporary relief. I have never seen a case of exophthalmic goiter cured by internal medication.

The greatest relief has been obtained from absolute rest in bed in a quiet room, dimly lighted, an ice-bag over the cardiac region to control the heart, nourishing but easily digestible food, and no internal medicine.

Surgical treatment consists of removing about three-fourths of the gland; in severe cases, ligating the thyroïdal arteries, and later removing the gland, if necessary.

The question may be asked, how can we make a diagnosis of exophthalmic goiter, and upon what must we rely to be satisfied that the patient is not suffering from some disease other than thyroidism. The blood-



Exophthalmic goiter in male, showing facial expression.

count is practically normal in a patient that appears to be suffering from severe toxemia. We have in exophthalmic goiter nine points of diagnosis: 1. Tumor; 2. tachycardia; 3. tremor; 4. exophthalmos; 5. gastro-intestinal disturbance; 6. mental disturbance; 7. amenorrhea; 8. dysmenorrhea; 9. rapid changes in body weight.

In an attack of acute thyroidism, all these symptoms and findings may be present, but it is not the rule. There may be only two or more; there may be tachycardia and mental disturbance and nothing else of importance can be found to assist us in our diagnosis. Again, there may be tremor, tachycardia and gastro-intestinal symptoms, etc. Goiter or tumor is not always perceptible, and the patient may suffer from violent toxins from a very small gland. The size of the tumor has absolutely nothing to do with the severity of the symptoms.



There is undoubtedly an association between the thyroid, thymus, pituitary, adrenals and the genitalia, especially the ovaries and perhaps the uterus. We frequently find these patients suffering with dysmenorrhea, menorrhagia, or amenorrhea, with slight gastro-intestinal disturbance, nausea and perhaps vomiting; upon bimanual examination we find the uterus slightly enlarged, and the ovaries tender and enlarged. If the thyroid gland is examined and found slightly enlarged, it may be the seat of the disturbance in the pelvis. I will cite a case that developed after the partial removal of the ovaries, a most violent attack of thyroidism. The ovaries may have been the organ that was trying to produce an antidote to the toxins produced in the thyroid gland, and the ability of the patient to produce the antidote being taken away, the patient developed a recurrent attack of exophthalmos. To substantiate my statements I will cite several cases, outlining the treatment and the results obtained.

CASE 1.—Miss B., aged 30 years, American; weight, 130; height 5 ft. 8 in., entered the Willard Hospital June 16, 1908. Operated on June 19. Left hospital July 15 cured.

*Family History.*—Father dead; committed suicide. Mother living and well. Brothers, one living and well. Sisters, two living and well.

*Patient's History.*—Patient was never strong. Menstruated at age of 17, at which time a goiter appeared for which she was treated four months; treatment unknown. At the age of 19 patient had chlorosis; was treated six months. From the age of 19 to 26 she was treated for nervousness and uterine trouble; treatment unknown. At the age of 27 had an attack of nervous grip in March; confined to the house three months. At the age of 28 was operated on for ovarian cysts; no improvement, but had a severe attack of nervous grip (nervous grip was the name given her by her physician) lasting all winter. At the age of 29, Nov. 30, 1907, changed doctors. She was at this time complaining of a sore throat; temperature 98.6, pulse 90-130. Examination of throat showed tonsils congested; small goiter present. December 4 Dr. C. was called. He found her in bed, face flushed, complaining of a severe headache. Temperature 98.6, pulse rapid, 120-140, weak. Thyroid larger than on November 30. She complained of severe pain in the abdomen, tongue was coated, breath offensive. She told the doctor she had one of her old attacks of nervous grip. The doctor made a diagnosis of exophthalmic goiter; treatment, eliminations with thyroidectin. Was in bed from Nov. 30, 1907, to March 7, 1908, when she was operated on for chronic appendicitis and prolapsed uterus. No improvement. Left the hospital and sent to a sanitarium, where she was confined to her bed until she entered the Willard Hospital June 16, 1908.

Examination at the hospital: 1. A small goiter present. 2. Exophthalmos. 3. Pain over entire abdomen. 4. Extremely nervous. 5. Mitral regurgitation. 6. Tremor. 7. External and internal hemorrhoids. 8. Patient had been in bed for six months. 9. Blood: Hemoglobin, 90; reds, 5,400,000; leukocytes, 7,812; polynuclears, 62 per cent.; large mononuclears, 10 per cent.; eosinophils, 1 per cent.; small mononuclears, 27 per cent. Patient showed symptoms of grave toxemia without blood change, the typical condition found in exophthalmic goiter. 10. Marked mental disturbance.

As her condition was chronic thyroidism, I advised operation at once. June 19, three days after entering hospital, I removed entire right lobe and most of left lobe. Right lobe contained a large cyst. Also operated for hemorrhoids. Patient stood alone on the seventh day after the operation and was walking on

the tenth day. She remained at the hospital four weeks at our request to note condition at menstrual period. This was free from pain, the first time in thirteen years.

Patient at present is fairly well, but has at times a little mental disturbance. This patient has had two laparotomies, but received no relief until goiter was removed.

CASE 2.—Miss C., aged 19 years, Irish, was admitted to the Willard Hospital Dec. 3, 1908. Family history negative. Father died, aged 63, of apoplexy. Mother living and well, aged 58. Brothers, two living and well. Sisters, two living and well.



Cystic goiter in male, showing no change in expression.

Patient has had diseases of childhood, otherwise she has been well until the present illness started six months ago. At this time she complained of nervousness, with some dizziness, accompanied by a tingling sensation in the fingers. One month later, or five months before entering the hospital, she had a slight gastric hemorrhage, vomiting a small amount of blood. She received treatment for gastric ulcer and improved. Did not menstruate for three months. Shortly after this she complained of headache and impairment of vision, but did not seek medical aid. At this time exophthalmos developed.

Dec. 2, 1908, or the day before entering the hospital, she suddenly became delirious and had almost complete paralysis of the right arm and leg at this time. Dr. V. L. Sheets saw her and advised the mother to take her to the hospital. This she refused to do. Early next morning, December 3, the patient vomited a large amount of dark blood. She was at once removed to the hospital, where I first saw her. The patient was restless, talking incoherently, left leg and arm

in almost constant motion. Right leg and arm moved but little. Temperature, 99.6; respirations, 26; pulse, 150, irregular, marked mitral regurgitation. Exophthalmos and a very small goiter.

Diagnosis: Exophthalmos with gastric and probably cerebral hemorrhage. Blood: Hemoglobin, 85; reds, 5,600,000; leukocytes, 8,500; polynuclears 76 per cent.; small mononuclears, —; large mononuclears, —; uranalysis negative. Patient was placed in a quiet room.

Treatment: Absolute rest, ice bag over heart, bromids and thyroidectin. The patient improved rapidly and left the hospital Jan. 9, 1909, on the thirty-seventh day apparently well. She was under the care of Dr. Sheets until March 31. She re-entered the hospital for operation. At the request of Dr. Sheets she was assigned to me, and the following day, April 1, I removed, under ether anesthesia, the greater part of both lobes. The patient was up in a chair the third day after the operation, and left the hospital the morning of the seventh day, apparently well, and has remained in perfect health to the present time.

Summary: 1. Tachycardia. 2. Goiter. 3. Exophthalmos. 4. Tremor. 5. Mental disturbance. 6. Gastro-intestinal symptoms. 7. Paralysis of right arm and leg. 8. Dyspnea. 9. Amenorrhea. 10. No blood change.

CASE 3.—Mrs. B., aged 25 years, entered the hospital March 7, 1907, giving the following history: For a number of years she had complained of dyspnea, marked nervousness, palpitation of the heart, marked impairment of vision. On entering the hospital she was scarcely able to walk around the room, the slightest exertion causing palpitation of the heart and extreme weakness. Examination revealed the following: Patient poorly nourished, skin of dusky hue, tongue coated, eyes bulging. Lost 60 pounds in weight in two years. Physical examination showed marked emaciation; a tumor in the region of the thyroid gland; the heart was enlarged; a mitral regurgitation murmur was present; heart beating from 140 to 160 times per minute. Temperature ranged from 98.6 to 100. There was marked tremor when the arms were extended and the fingers separated. Diagnosis: exophthalmic goiter. Advised operation.

The patient had been treated for several years with thyroid extract, later by thyroidectin, with little or no benefit. After remaining in the hospital one month under treatment, complete rest in bed and forced feeding, the gland was removed April 5, 1907, under ether anesthesia. The tumor was small, but was held firmly against the trachea and partly surrounded the trachea. The trachea was much narrowed by the constant pressure of the tumor, producing the dumb-bell-shaped trachea. The constriction of the trachea in connection with the pressure on the recurrent laryngeal nerve caused the difficult breathing.

An incision was made from right to left external jugular veins parallel to the folds of the neck; the skin was reflected up and down, respectively, and the muscles divided longitudinally in the median line over the trachea and retracted. The tumor was exposed and removed with considerable difficulty, being bound firmly around the trachea. The wound was closed by interrupted silk-worm-gut sutures.

CASE 4.—Miss F., aged 24 years, American, entered the hospital, Jan. 1, 1908. Family history: Father living and well, aged 56 years. Mother died, aged 61, of carcinoma. Sisters none; brothers none.

Has always been well excepting the usual diseases of childhood until the present illness. Menses regular. About two years before entering the hospital a goiter gradually appeared. She was treated and the tumor diminished in size, but the eyes became prominent and she at times had great dyspnea with tachycardia. There had been at no time any gastro-intestinal symptoms.

The greater portion of the right and left lobes were removed Jan. 2, 1908. Patient up in a chair on the third day and left hospital on the tenth day. There have been no symptoms since.

Summary: 1. Tachycardia. 2. Exophthalmos. 3. Goiter. 4. Tremor. 5. Dyspnea. 6. No gastro-intestinal symptoms. 7. No mental disturbance. 8. No paralysis. 9. No menstrual disturbance. 10. No blood changes.



## DISCUSSION

Dr. W. E. Walsh, Morris:—This boy, when 11 years of age, but who is now 18, came to me complaining of headache, weakness and enlarged throat. The first thing was they wanted the boy to grow, and he was fed thyroids in 1-grain doses three times a day. He had a fast heart, and in the summer of 1907 he developed acute thyroidism. His pulse went up to 120 to 130; blood-pressure 110 to 130 or 140; he developed a murmur, and this lasted for three weeks, and recovered. In the meantime we have used the x-ray on the gland, and he was referred to several specialists and treated without any benefit as regards this growth. The father and mother and other members of the family are practically normal. There may be some little abnormality in one of the other children, but nothing along this line. Now, this young boy, first of all, has the round face of a cretin. He is of short growth. He has a very small undeveloped testicle. He has a mucous patch on the back and pubes and supraclavicular space. His hair is rather coarse; his skin dry and scaly. Besides, he has the tremor of exophthalmos; he has a very acute mentality. He has always stood at the head of the class. He went through the first year of high school and gave it up two years ago because efforts to study made his heart beat too fast. The heart beat is about 80 or 90. If he exerts himself, the heart beat runs up. His fingers are not those of a case of myxedema or a cretin. The extraordinary thing is that we may get a hyperthyroidism gradually develop into a myxedema, and *vice versa*, in grown people, but in looking over the literature we find that this is the first case of cretinism, or apparent cretinism, that has carried the hyperthyroidism all through. In this respect it is an extraordinary and interesting case. He probably has a perverted function of the thyroid, or it may be associated with some trouble of the pituitary body. This we have not worked out, but we are going to get competent people to try and do so.

Among the other things that have been suggested for treatment have been feeding with orchitic fluid and ligation of the upper pole of the right side. During the attack he had in 1907 there was a nodule in his right thyroid, which was hard and tender. He had a slight temperature, but this went down afterward. They wanted to have the nodule taken out, but the surgeon would not consent to do it. The best results as regards the diminution in the size of the thyroid, and especially his cheeks, have come from taking thyroids or iodonuclein.

Dr. Carl B. Davis, Chicago:—We know that there is a definite relation between the thyroid and the ovaries, from the swelling of the thyroid in adolescence, pregnancy and the menopause, and not infrequently a woman, who is normal otherwise, will show enlargement of the thyroid at each menstruation, and in some cases menstrual trouble is relieved by the use of thyroid extract. A similar discussion to this was held in the Chicago Medical Society last November. Dr. Rogers mentioned the relation between exophthalmic goiter, hyperthyroidism and menstrual disturbances; at least ovarian or pelvic pain. At the same meeting last fall I reported a case in which a panhysterectomy was done for an enormous fibroid. The ovaries were removed at the same time, and although they were perfectly normal, they had to come out because of the blood supply. This woman had a small nodule in the right lobe of the thyroid which had been present for fifteen years, but which gave no trouble. She returned to the hospital in three months after the operation with a typical case of hyperthyroidism. She had lost weight, showed tachycardia tremor and exophthalmos, and this nodule had increased to the size of a fist. We removed the right lobe. The whole clinical picture changed, and she gained 40 pounds in three months.

Thinking there was some relation between the hysterectomy and her condition, dogs, which had normal thyroid glands, were subjected to double ovariectomy, but showed no change in their thyroids. But every dog with a primary enlargement of the thyroid whose ovaries were removed, showed an increased enlargement of the thyroid, and in some of them the enlargement of the thyroid attained enormous size. Some of the dogs, after the removal of the ovaries, were fed thyroid extract, and no change was noticed in the thyroid glands. After

dropping the extract, inside of six weeks every dog showed enlargement of the glands. It would seem that not only is there a relation between the ovaries and thyroid, but also between the thyroid and the pancreas, the hypophysis and the chromatin system, consisting of the chromophilic cells of the adrenal bodies and the sympathetic system. It has been shown that if we inject adrenalin extract into dogs we get a glycosuria. Thyroidectomized dogs do not show this reaction. The glycosuria returns in thyroidectomized dogs in direct proportion to the amount of thyroid extract we feed the dogs, showing a definite relation between the thyroid gland and the internal secretion of the pancreas. It has been shown that the chromophilic system plays a considerable part in the mobilization of the carbohydrates. The thyroid has an activating action on the chromophilic system. It has an inhibiting action on the internal secretion of the pancreas. In exophthalmic goiter we get an overproduction of the thyroid extract and an activating action on the chromophilic system and an inhibiting action on the pancreas.

With increased mobilization of sugar and diminished oxidization we obtain a high sugar index in the blood and a subsequent glycosuria. This condition is found in a certain number of cases of hyperthyroidism. Some cases where glycosuria is not present will show it on excess of sugar in diet. Glycosuria is not constant and cannot be induced in some cases of exophthalmic goiter. Rogers of New York suggests that it is due to a variation in some of the constituents of the thyroid extract, or to some other disturbance in the inter-relation of the ductless glands.

Kocher has recently advised early operation for hyperthyroidism. Goiter associated with tachycardia would be sufficient without waiting for a further development of symptoms and a less favorable condition of the patient.

Dr. Frank P. Norbury, Hospital:—The diagnosis of cretinism in the case presented by Dr. Walsh is, in my judgment, faulty; at least, in so far as my knowledge of cretinism goes. I judge by the experience I have had with cretins, and a fair knowledge of their characteristics as revealed by the literature. This boy does not present the physical or mental characteristics of a cretin. I especially note his stature; his facial expression; his hands and feet; his skin; his hair; the pulse-rate, and above all, his mentality.

A cretin is marked by short-stunted body growth, with characteristic bow-legs, large feet, hands and joints; a protuberant abdomen due to deposits of solid edema, a peculiar heavy growth of coarse hair, which extends down onto the forehead; a scurvy skin; drooling at the mouth and a marked intellectual defect, which is a part of cretinism. In fact, a true cretin is an idiot by deprivation, which the improvement which follows giving of the thyroid extract proves. Cretinism is certainly due to the absence of the internal secretion of the thyroid gland. The feeding of the patient with thyroid as a therapeutic agent, overcomes the constitutional defect—the defect in metabolism, and improvement follows.

Those of you who have followed the literature will remember the cases reported by West, of Ohio, who made a most systematic clinical study of this disease. I saw and treated as a consultant the case of a boy cretin, treated by thyroid extract, who developed physically and mentally to the degree of being able to enter school and hold his own with the average boy of his age. The patient presented here to-day is, in my judgment, a case of infantilism with thyroid involvement.

In speaking of the treatment of exophthalmic goiter, I would like to mention an observation recently made by Dr. Miles F. Porter, of Fort Wayne, Ind. It was my privilege to see the patient with Dr. Porter the day of treatment at Fort Wayne. Dr. Porter's treatment was simple, unique and striking. The patient presented the usual symptoms of exophthalmic goiter with a pulse-rate of 136 to 140. Dr. Porter injected boiling hot water in both lobes, with the result that there was a diminution of the size of the goiter and the pulse dropped to 86 or 90, without much physical discomfort on the part of the patient. The theory of treatment is, that the hot water coagulates the colloid and reduces hyperthyroidization, thereby giving relief. Dr. Porter says the treatment is experimental.

This was the first case he has treated by this method. I would like to ask if anyone here has had any experience with this treatment.

Dr. James F. Hultgen, Chicago:—In regard to the blood findings in Graves' disease, I remember quite well that last summer Kocher wrote an article on that very question, maintaining that in exophthalmic goiter there is lymphocytosis and leukopenia, which he considered characteristic. There is certainly not a polynucleosis nor leukocytosis in that disease except in the acute exacerbations, as the disease is nothing but a chronic intoxication from the thyroid, and it is to be expected that it should only bear witness to a chronic irritation of the blood system which expresses itself in a leukopenia and mononucleosis. Only when we get an acute exacerbation the polynuclears run up without a corresponding leukocytosis.

I am glad to have heard Dr. Davis' remarks, after having seen Dr. Axel Werelius conducting his experiments on goitrous dogs in Chicago. He finds that there is no relation between the goiter in dogs and exophthalmic goiter or Graves' disease; although they are cystic goiters, still he could not connect them with the disease such as we find in the human being.

If Dr. Davis objects to the term Basedow's disease, Graves' disease or exophthalmic goiter, I think one can raise as much objection or more to the term of hyperthyroidism. I think there is a good deal in a name. There is more than hyperthyroidism. There is always more or less disthyroidism and we should understand it is a disthyroidism and not a hyperthyroidism. There is a thick skin infiltration of the subcutaneous tissues with myxedematous symptoms; indeed, in the majority of cases we get a mixture of myxedema and hyperthyroidism.

With regard to the case of this boy, I agree entirely with Dr. Norbury. I believe it is a case of infantilism *plus* a little myxedema and a little hyperthyroidism. I do not think I could place him under any single head and label him such and exclude the others.

Dr. Victor C. Schragar, Chicago:—From the number of cases of exophthalmic goiter I have watched in the clinics of Dr. Murphy and Dr. Bevan, I have gained the impression that a number of these patients do not get well under any treatment, medical or surgical, because there is a close correlation between a number of organs of internal secretion. This has been emphasized particularly by one writer, who has published a monograph in which he lays great stress on the correlation between the organs of internal secretion. It is not the thyroid alone that is changed pathologically, but the hypophysis, the adrenals, and a number of other organs. We cannot cure the individual after she has reached that pathologic state. If you say that surgery is going to cure all these cases, then I think it is a lack of knowledge on your part of those changes that take place in the organs of internal secretion.

I have learned a small detail from Dr. Murphy in the technic. He puts a gutta-percha drain in the lower pole of the incision, not so much for draining the serum that collects in such a vascular zone, as to drain the excess of thyroid secretion which happens to take place in a raw surface. You cannot cover that surface; after removal of the two poles you have a secretion which gives the patient alarming symptoms after twenty-four hours. I recall the case of a clergyman who had a temperature of 105. He had very marked tremor; was delirious after operation, which consisted in the removal of one and a half of the lobes. The case was not drained. Ever since Dr. Murphy drains all cases, not with the intention of removing blood and serum under the skin, but removing the excess of thyroid secretion which takes place after operation.

There are a number of cases which come within the domain of the neurologist, and those are the cases that present the exophthalmic goiter syndrome without exophthalmos. There is tremor, tachycardia and nervousness which are characteristic of exophthalmic goiter, but these cases are not associated with enlargement of the thyroid glands. In other words, it is unnecessary to have a very large thyroid which you can see across the room to call it exophthalmic goiter. With the exception of the cases where the thyroid is enlarged within the chest,



the so-called intrathoracic goiter, it is not visible, but which you can detect if you percuss the upper portion of the sternum, not the thymus, and which represents exophthalmic goiter within the chest.

With reference to the case exhibited by Dr. Walsh, I quite agree with Dr. Norbury that it is not a typical cretin. However, a cretin may improve spontaneously without any medication, and there are a number of such cases reported. This can be explained in two ways: either the thyroid has suspended function for years, or else the thyroid, which is completely pulseless, histologically, is compensated for by accessory thyroids. There are a number of cases reported in the literature of insignificant nodules which at some time became enlarged and compensated for the function of the deficient thyroid.

Dr. Coleman G. Buford, Chicago:—If I could further add a ray of hope to a certain group of cases of advanced hyperthyroidism who are refused operation, I would feel that I had done a great work. A year and a half ago, because I wanted to hear my patient speak during the removal of the thyroid gland—because I wanted to preserve the recurrent laryngeal nerve and to imitate what had been done abroad successfully, and because I believed I could more safely operate on certain cases of advanced thyroidism, I adopted local anesthesia in my thyroid work. In this year and a half I performed about fifteen thyroidec-tomies under local anesthesia, and of this number I lost none. One of the two cases which I operated on a week ago last Monday was the first who complained much and she asked for an anesthetic. All the rest are the best testimony I can offer that women will stand the operation performed under local anesthesia, and the best testimony I can offer as to the value of local anesthesia in thyroid surgery in the worst cases of thyroidism is that one of these patients would not have undergone any physical test which is employed by some surgeons, such as walking around the block, or that the patient must not have acute dilatation of the heart. This patient had the latter and delirium, ~~and in~~ <sup>and in</sup> despair we took this patient to the operating room, infiltrated the skin, removed the thyroid gland without any resistance on her part, and she did not have an exacerbation of her thyroidism afterward. Five months have elapsed, and the remaining lobe of the thyroid is growing, but she is getting better daily. The growth after operation of the remaining lobe is a thing that is distressing the minds of many surgeons. If they will only wait one year or a year and a half, they will find that this is only a compensatory enlargement, and while the patient gets restless because of the enlargement, and may have increased thyroidism, in many instances there will be a gradual diminution in the size of the remaining thyroid which took on temporary hypertrophy.

Dr. Charles L. Mix, Chicago:—I am glad Dr. Buford called attention to the hypertrophy of the left lobe after the removal of the right. In some of my own cases I have further noticed that such hypertrophy was sometimes accompanied by transitory symptoms of hyperthyroidism coming on again. The pulse in one man, operated on two years ago in July, rose from seventy to eighty beats after operation to about 100. If during this period of irritation we do not lose our heads, as Dr. Buford said, and send the case back to the surgeon to have the other lobe removed, the case will right itself. The pulse of this individual at the present varies from seventy-eight to eighty. I regard the enlargement of the left side as merely due to an overcompensation on the part of the gland after a large portion of it has been removed. Nature, in trying to restore thyroid equilibration, apparently produces a little more thyroid extract in the left lobe than is necessary. But if one waits, the condition, at least in the cases I have seen, rights itself.

Dr. Harold N. Moyer, Chicago:—I would like to say a word or two with reference to the possibility of spontaneous cure. The idea that only surgery and medicine can relieve or cure these cases, is a mistake. I can go over my case-books for twenty years and pick out many cases that have never been operated on or treated, and they got well; I want to emphasize the point that spontaneous cures in cases of exophthalmic goiter of a grave character are very common.

Dr. Cassius C. Rogers, Chicago (closing the discussion):—I did not take up the technic of the operation in this paper at all. When I operate on these cases I drain all of them by split rubber tubes. These rubber tubes are small.

Recently there were two articles published in the *Presse Médicale* of April 6 and April 9, 1910, in one of which the author deals with hypertrophy of the thymus gland in these cases, and the other discusses pregnancy in connection with enlargement of the thyroid, and takes the position that few of these women become pregnant; on account of the internal secretion of the thyroid gland they are rendered sterile.

As to the blood count in these cases I think Dr. Hultgen must have misunderstood me in saying that there was an increase in the polynuclears. I did not say that. There was no change practically in the leukocytes, so far as an increase is concerned. I have had about 100 cases of exophthalmic goiter and a blood count made in every one of them. None of them had marked leukocytosis, excluding the acute cases, when we have frequently an increase in the polynuclears. In chronic cases we have a diminution in the polynuclears at the expense of the small mononuclears. When there was a diminution in the polynuclears, the small mononuclears were increased, and the large mononuclears were not affected to any great extent, so there must be an increase in one at the expense of the other. The polynuclears are diminished, while the small mononuclears are increased, and that is what we have found in the majority of these cases. The mortality following operation in these 100 cases was 8 per cent. I am sure, in the cases I have seen that have not been operated on, but have been treated by internal medication, the mortality has been much more than 8 per cent.

With reference to local anesthesia, I have operated under local anesthesia and under ether and chloroform. Sometimes we have cases of exophthalmic goiter of the hemorrhagic type where we have increased blood supply; at other times the blood supply is not so great, and when we have extensive pulsation in these glands the operation under ether is very hemorrhagic, and chloroform is preferable. I have operated under local anesthesia with cocaine and removed goiters of the exophthalmic type as large as my fist, and these patients did not know they had undergone operation for exophthalmic goiter for three days after the operation. They thought the superior thyroid vessels were ligated under local anesthesia.

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## SUPERSTITIONS OF THE MEDICAL PROFESSION IN REGARD TO CONTAGIOUS DISEASES

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“’Tis a history handed from ages down: a nurse’s tale which children open ey’d and mouth’d devour. We learn it and believe it.”

“The superstition in which we were brought up never loses its power over us even after we understand it.”

Since earliest times diseases were supposed to emanate from the evil one, spirits, hobgoblins, etc. Man is prone to superstition as the sparks are to fly skyward. What he cannot see, but realizes the effect of, he is inclined to attribute to some occult power, a something supernatural. In ancient times, and not so very ancient either, in some places on this earth, the oracles were consulted and the gods importuned to drive away the evil spirits that were afflicting the people.

Diseases have been supposed to have been transmitted through the air. Wonderful stories have been told as to how the black plague and

cholera came in the form of a great cloud or mist containing the contagium and settled down on large tracts of country carrying death, misery and suffering to nearly all the inhabitants of whole territories. Ignorance could not account for it; believed it to be a punishment of the people for the sins committed, hence the incantations and supplications to countless unknown gods.

The virus of disease was supposed to be carried in the clothing of human beings; in the hair of the dog; in the fur of the cat; in the feathers of our little pet, the canary bird; in rags, papers, books, letters, etc., and this idea is still harbored by the unthinking masses of the people and by many physicians.

This supposed bogey individual is believed to lurk in dark, filthy alleys, in sink holes, privy vaults, stagnant water, etc. He is supposed to ride on the wings of the winds leaving in his wake villainous odors laden with bacteria, bacilli, spirochetes and what not. But none of it! Bad odors do not of a necessity contain the germs of disease. What odor is disagreeable to one person may be pleasant to another, a mere matter of taste. Men may live and thrive in foul, disagreeable air. Witness our sewer cleaners; a stronger class of men cannot readily be found in Chicago than the men who are engaged in cleaning our public sewers. They go down into the sewers, live over them, breath their foul, stinking atmosphere, and yet they are a healthy, rugged class of human beings. So much for your pernicious foul air. Out with your theories and give us facts.

Diseases were supposed to have been carried on railroad trains from one city to another by taking germ laden atmosphere in the compartments of the cars. Atmosphere is not easily transported in open cars, but they do carry contagious diseased persons, thereby spreading the living germ from the living individual.

The theory has been advanced, and believed, that vessels carry diseases in their cargoes and in the bilge water. Now we say they carry the pesky mosquito anopheles, the rodent, and familiar though much detested bed fellow, the bed-bug and flea. You know that the Lord, according to ancient script "sent all manners of flies and lice upon the people" Egyptian, and the result was pestilence and death. In the light of modern scientific medicine, "Thou shalt not be afraid of the pestilence that walketh in darkness, nor the destruction that wasteth at noonday."

All kinds of theories have been advanced as to how the virus of disease is scattered over the face of the world. It has been, and still is the general belief of mankind, including boards of health and some physicians, that nearly all diseases are spread by the people carrying the disease germs in their clothing, in rags, in filth, in paper money; dogs and cats doing their share in carrying the death-dealing germs to their best friend, man, poor, much abused, innocent creatures; when you come to examine and scientifically investigate, how absurd it all is.

The idea that fomites, clothing, rags, paper, contain the contagium is a most popular theory and has been and is accepted by the great mass



of mankind and is a result of ignorance and superstition. Great famines and wars are supposed to have been the cause of outbreaks of scourges and pestilences that have at times swept over the country. Indirectly they may have been, but not *per se*.

Some of the pestilences—bubonic plague and cholera, have been of such violence as to absolutely depopulate large cities, towns and districts and were supposed to be the judgments of the gods on the people; but it was pure ignorance of the inhabitants who did not know the common laws of protection from contagion. Prayers, incantations, fires, ringing of bells, clanging of cymbals, shouting and all manner of noises have been employed to drive away the evil spirit, disease, but all in vain.

Like Paul on Mars Hill, when he saw among the many monuments dedicated to the known gods one erected to the unknown God he proceeded to declare Him to the waiting multitude; so Science, not seeing among the many confused signs, tokens and totem poles reared to the unknown cause of disease, proclaims to the world that there is a known, true cause for every disease that is afflicting humanity and announces that mosquito anopheles is the carrier of malarial fever; that the mosquito is the carrier of yellow fever; that the rodent rat is the conveyor of the virus of bubonic plague; that the pesky little fly of the lower Ganges river is the promulgator of cholera; the tsetse fly the distributor of the poison of sleeping sickness, and *Bacillus typhosus* the cause of typhoid fever; influenza spirochete the cause of la grippe; and it also assures us that it will give us the cause of scarlatina, rubeola, varicella and variola if we will with patience wait. Now comes pellagra, the latest of parasitic diseases. Some one who considers himself authority says "corn, i. e. maize, is the cause," and without any other proof we accept the dictum and, like a flock of sheep, when one goes over the fence the others follow, bleating, yes, corn is the cause of pellagra; down with corn. Please wait until you know the truth before condemning. Pellagra is in the country where no corn, i. e. maize, is raised, known or eaten. What irrational thinkers we doctors are. A physician having the degree of Omega makes a statement and all open mouthed swallow the assertion. Require proof; show me. The itching desire to be the first, not the surest, in the field of discovery leads many to make egregious bulls for the reading public. In regard to pellagra, the actual facts are that it is due to the *semulium reptens*, a blood-sucking insect found in running water which appears to be perfectly pure and free from any bacteria or disease-giving germ. It is most active in spring and fall. Now what becomes of the fomites theory in this disease? And what about the lazy, tired sickness? Any fomites about the hook-worm? We are not always scientific in our science. Science also points to a putrefactive condition of the intestines as the cause of cancer. Science asks us to be patient, prove all things before accepting theories. When we know not from whence cometh disease we become cowards at the mention of a great scourge in our neighborhood or state. How blanched the cheek of the mother when told that scarlatina or diphtheria or small-pox is in the vicinity, and when the outbreak occurs how it is charged up to milk,

food, etc., and no one takes the trouble to make a thorough scientific investigation as to the origin of the disease.

Somebody says that a certain individual came from a neighboring town or locality where the disease was prevalent and forsooth that person brought the germs with him, in or on his clothing. That is not proof, merely gossip. Again rumor has it that there is scarlatina or measles or diphtheria on, or in the neighborhood of a dairy farm, then up goes the cry "the germ is in the milk pail," and the lacteal fluid is given to the hog or chickens on which they grow fat and we eat the chicken and hog. But no one finds the germ in the milk, and still we are groping in the dark.

How many years since it was taught that malarial fever was caused by a certain specific miasma and back water that was standing on submerged land, or newly ploughed ground? What intelligent physician believes it now?

A few years ago in Crawford county, Pa., an outlet to a small lake was dammed up in order to raise the level to make it a feeder to a nearby canal, and by so doing a great many acres of land were flooded and it became a great breeding place for the anopheles mosquito. Results: in the fall of that and the next year an epidemic of malarial fever was on the community and the silent home of the majority reaped a large increase of tenants, and all charged to miasma, polluted atmosphere, etc. The low, sandy seacoast of New Jersey has been from time immemorial the habitat of the pesky anopheles mosquito, who prowls by night, singing his sweet lullabies, all the time seeking whom he might find to inoculate with the plasmodium malarie; then follows in due course of time the chill, fever and sweat. No mal air to charge this to. Some parts of Italy have been rendered uninhabitable for bipeds and quadrupeds in the home of the anopheles mosquito. They were the original denizens and they defended their homes. Now we know that malarial fever is the direct result of the bite of said mosquito, and in no other way can man be infected with this disease. The downfall of Rome and the ruin of Greece has been attributed to the ravages of malaria depleting its armies and population.

How many years since yellow fever was supposed to be conveyed from place to place in fomites, in the mails, in the clothing, in rags, in vessels? How many years have lapsed since our government had all mail matter nearly incinerated, that was received at New York coming from an infected territory in order to kill the germs of yellow fever? And who has forgotten the shot-gun quarantine established in some parts of the south? But the anopheles, like Mephistopheles, laughed in his sleeve at the discomfiture of his victims, and the ignorance of man. But we have become wise now and anopheles and all his kin are being hunted to death on his native heath.

Only a short time ago bubonic plague was charged up against the heathen Chinese, the East Indian, and the little Jap for its appearance on our western coast by the influx of these undesirables, bringing the germs of this terrible disease. But when scientific men got to work in

a scientific manner and persisted in searching for the cause they finally cried "eureka" and the foreigner was exonerated and the rat was found to be the importer of the foreign goods, a veritable smuggler. He harbored in the rat a little imp, the flea, and said rats being infected with the plague germ, permitted, not voluntarily, the fleas to draw from his blood the germs of the plague; and fleas, having a strong liking for human blood, translated themselves at the first opportunity to men and began a thorough system of inoculation; and they did it scientifically, as witness the great loss of life from said disease in California. The introduction of this plague into this country was due to the ignorance, unconsciousness of the steamship companies plying from the far east to our far west in allowing their vessels to become infected and overrun by rats. Destroy the rodent of whatever species found, and the plague ceases; then your epidemic is stamped out. Now what becomes of the fomites theory?

Again, a few years ago typhus fever was supposed to originate in overcrowded, ill-ventilated ships; in the ship's bilge water; in the filthy condition of the emigrants. But germs do not start *de novo*; some living thing must have been harboring the spirochete. He is found and he proves on inspection to be our sometimes bed-fellow, detested and abhorred by every good, clean, neat housekeeper, the *Cimex lectularius*, the bed-bug; and now is accused and rightly of being the vaccinator of the germ typhus. Again what becomes of the fomites theory?

A few years ago the domestic fowl was charged with the crime of being the originators and distributors of diphtheria, and off went their heads; the bodies to market. Our friends of the *Gallus domesticus* fraternity have been exonerated. A few years ago I heard a member of the board of health say that even the canary bird must not be allowed to remain in the contagious sick-room, and if so left must be thoroughly plucked before being allowed to go into an aseptic room for fear it might carry with it some of the germs and be the means of conveying the infection. You have a legal right to believe as much as you please, and what is not rational and common sense cast out.

Only a few years ago when variola was present in some sections of the country it was the proper thing to wear little bags filled with asafetida strung around the neck to keep away the evil germs of small-pox. It is doubtful which evil was the least. What superstition! How gullible we mortals are.

The germs of scarlatina and diphtheria have been, and are believed to have been carried in letters, books and other things that have been in the room occupied by a patient, and handled and used by them. This is a popular belief and accepted by the masses, and assented to by the bulk of the medical profession and that without any scientific demonstration. Beliefs are not facts.

If the contagium of scarlatina, diphtheria, rubeola, varicella and other contagious diseases are carried in the clothing, hair and other things handled in the sick-room, then the physicians are the greatest cul-



prits extant in disseminating these diseases in the community. How many doctors believe it?

Some years ago, some ultra, ardent, overzealous physicians, in order to prevent their being the source of carrying the germs from their patients to the innocent children of their patrons, used to wear white gowns covering their bodies from the neck to the feet, and a hood for the head and a muzzle for the mouth; in fact, they were covered complete excepting eyes, all done for what? Effect or misguided knowledge; and what results? How many physicians visit their patients at this date arrayed in angelic garments of shining white? Not one. Why? Because they do not believe wholly in the theory of fomites. How many doctors know for a certainty, not believe, that diseases are thus disseminated?

Before accepting such a dogma get absolute proof. Take no theory, no hearsay. Be not superstitious. The medical profession is broken-backed now from carrying theories and superstitions. How many persons reach adult or middle age who have not had scarlatina, rubeola or varicella? Not 5 per cent. How many persons tell you that they never have had scarlatina, rubeola, etc. who do not know, only mother said so? How many have these diseases and are not aware of it? So slight that they have no complaint? Many, many many. How many children diseased go to school during an epidemic, through a whole run of the disease? Hundreds.

Four or five years ago during quite an extensive epidemic of scarlatina, milk was charged as the fomites of conveyance. It was asserted that the disease was on or near some of the dairy farms and that some of the employees in handling the lacteal fluid dropped germs into the milk pails or milk cans and said milk was delivered to the unsuspecting unimmunized children. Then the wiseacres set up a hue and a cry. The boards of health howled, and the newspapers made a grand chorus of dolorous discords. What did it amount to? A grand scare, a financial loss to the dairy farmers; some ephemeral glory to the health officers; and in due course of time when the living fomites ceased to be, and all the unimmunized had had the scourge, the disease died out, was stamped out by the vigilance of the health department and the press; and who saw a single germ? No one. If they did why did they not show them?

During said epidemic a mother brought her son to my office stating that he was unaccountably nervous, with no apparent cause. I had him stripped to the waist and when he came into the light I remarked a good bright color; "yes," the mother said, "he is a pink and white boy." "But," I replied, "not just this shade of pink"; took him to the window, examined his throat, and found the characteristic color. I remarked: "This boy never had scarlatina? No? Well he has it now." "I ain't sick," said the boy. "Well, no, but you have the scarlet fever." He still insisted "I ain't sick." All the same I advised the mother to take her son home and if there was any rash the next morning to call me. But the order was there and then given for me to call the next day, which I did, and found a good typical rash with the red throat of scar-

latina. But the lad still insisted that he was not sick and requested to be allowed to go to school. He was quarantined for four weeks instead, and isolated to one room in the rear end of the house. The boy was never sick in the sense in which that word is usually used. This case would never have been detected if the mother had not brought him to me for nervousness. How many just such cases that are never found out go right along to school?

During the same epidemic, at the tail end of it, a boy, aged 10, was brought to my office by a former patient of the same age. I looked at them and inquired which one was sick. One said, "it's me." "What's the trouble?" "Oh, I'm swelling all over"; and sure enough. I said to him, "You have been sick." "No." "Yes, had scarlet fever?" "No sir, never sick." I then said: "Five, six, or seven weeks ago were you not sick so that you had to stay out of school?" "Oh yes; I went home one afternoon, vomited, had headache, etc. Well the next day but stayed at home, and went to school on the morning of the third day"—and continued in school the remainder of the disease and the balance of the term. Desquamation was slight, not sufficient to attract any attention of the family. Now how many children are doing the same thing during every epidemic? Sick and know it not: scarlatina. And these are the living, moving fomites.

Early in the spring of this year a young lady came to my residence, a cold, chilly day, in a partially open auto. She was very hilarious, in good spirits, said grandmother sent her: nothing the matter, just a slight rash with much general itching, and had been two days, and she out auto riding every day. On examination I found the characteristic rash and usual red throat. When told she had scarlatina she took it as a joke. But when she was informed that she must go home and be quarantined for four weeks she was indignant and protested that she was not sick; and she was not during the entire run of the disease. There was no doubt as to the correct diagnosis in my mind. A sister of the above patient was kept in the house and at the end of the seventh or eighth day I examined her throat and there was the characteristic color with no soreness, and but a very slight rash. She was never sick in the common acceptance of that word, during the whole of the isolation. Both had good appetites, sleeping well and in the best of spirits all the time. It was only by accident that these two patients were discovered and quarantined, to keep within the law. The first patient was sent to me on account of the itching. A physician would not have been consulted if the grandmother had not insisted on her coming to me, I being the family physician. And there are scores of just such cases during any epidemic of scarlatina.

If the first patient had been consulted she would not have gone to a physician, and both patients would have gone about their daily occupations giving all their unimmunized friends a chance to contract the disease. It is the persons having the disease in such a mild form as not to require a physician or to be noticed by any member of the family and who go about their daily vocation, to school, to the shop, or shopping,

or visiting friends, who are blameable for the spread of disease. The moving, living fomites.

It is laughable to notice the public press saying the board of health is stamping or has stamped out the epidemic. The disease ceases to spread when all or nearly all the susceptible have had the disease or are immune and we have an end of the epidemic. No more trouble until the babies have grown up to the age of from 5 to 10 years when another outbreak, and so on *ad infinitum*. So it has run for the last forty-five years of my professional life, and back as far as you can obtain any literature on the subject and is likely so to repeat itself into the great unknown future. There is no use running from the disease when it is in a mild form, for sooner or later it gets all the unimmunized. The burden of proof is laid on those who say fomites are the carriers of the germs of the disease. Give us proofs and not theories. Facts are what we want.

I have some very serious doubts as to whether variola can be disseminated through the medium of fomites. We often hear of persons going to the health office or to the office of a physician for a diagnosis of a slight eruption on their faces, are not sick enough to be housed and yet have variola. These are the living fomites who raise a little tempest in their neighborhood when the truth is made known that they have small-pox.

Rubeola is sometimes so slight that it is only as a coryza, a little sneezing, a slight cough, a trace of eruption in the mouth, nothing in the general condition to call attention to it by the parents, and these living fomites run about, mingling with their little friends, go to school, and if they have enough of the virus, more than needed for the home consumption, inoculate the whole neighborhood.

It is these living, moving, sentient fomites, having the active germs in their throats in the anterior and the posterior nasal passages, who are not sick enough to require a physician or attract attention of the members of the family, just a little indisposed, who go to school or their daily occupation, who are blameable for the contagium being spread abroad. Again the living, moving fomites.

It is a great injustice to compel the bread winner for the large household of dependents to be quarantined for from three to eight weeks, and thereby deprive him from earning money to buy food for the prisoners. The public is loath to give them food to eat, and the charitably inclined are forbidden to go to or enter the house of the afflicted with contagious diseases. In fact I have known families to suffer for food on account of quarantine.

The yellow or red card tacked to an outside door strikes terror to the hearts of those who would go and render assistance, and then if they do go would be liable to arrest for violating an unjust health law. Many persons will run by a house or cross over to the other side of the street if they see a red card on the door. And what good does it do?

Alvah H. Doty, M.D., health officer of the port of New York, says: "During the outbreak of small-pox and typhus fever in New York City in 1892-93 the most careful and painstaking investigation was made in



connection with every case brought to the notice of the board of health. As a result satisfactory evidence was constantly being presented to show that the diseases were transmitted by personal contact ('living fomites') and not by the clothing and effects of the well person." If space allowed I might quote much more from Dr. Doty.

The examination of the school children is done in such a poor, slipshod manner that it is worse than useless. Whenever a case of variola, varicella, rubeola, scarlatina or diphtheria is reported in the neighborhood of any school, every child entering and leaving the school should have a thorough examination by an experienced expert, if they really want to prevent dissemination of the disease, and this should be done every morning to be of any value. The cost should cut no figure. The saving of human life is the only thing to be considered. Many children go to school having the measles, chicken-pox, scarlet fever, mumps, whooping cough and perhaps small-pox *during a complete run of the disease* and are entirely ignorant of the affliction. When a child goes to school having the complaint and sits beside a healthy unimmunized seat-mate, or mingles with the children in their games, he or she is very apt to communicate it to unsuspecting, innocent companions. No need of charging it to the clothing fomites; the living, walking, diseased are the disseminators of the virus. You might as well talk about stamping out the north wind as to stamp out an epidemic of scarlatina or measles under the present régime. The only way to immunize a locality, city, state or nation is to vaccinate; for vaccination for scarlatina, measles, chicken-pox, mumps, whooping cough and diphtheria will be just as effectual and immunizing as vaccine virus is against small-pox. Then and not until then will we be able to control all contagious diseases.

Again, paper money has been, and is now thought to be a great conveyor of contagion. How many physicians would refuse to take their honoraria, no matter how ragged or dirty, nor by whom offered, nor of what ailing? Queer, ain't it? Rather a reflection on their belief in the fomites theory.

How many bank tellers or government money inspectors are ever attacked with contagious diseases that could positively be traced to their occupation of handling money? I think all of us would accept tainted money and say nothing, and I would pocket infected money (and so would you, reader) and take my chances.

I noticed in a newspaper recently that a microscopist had found on a \$5 bill 80,000,000 microbes. I suppose a \$10 bill would have 800,000,000 and a \$1 bill 20,000,000; but not one of them was malicious, just common, every-day microbes, a really essential part of the universe; and without them the *genus homo* would soon come to his finish. I must say that in this great find not a germ of any contagious disease was demonstrated. The above does not talk very loud against fomites.

Now as to fumigating. It is all bosh, works great inconvenience in many households and does no good, excepting giving employment to the fumigators. A few years ago the burning of sulphur in a supposed infected room was the order of the day. A longer time ago the burning

of tar in a contaminated house was the thing. Now obsolete. If it was good then why not now? Smarter, are we? Perhaps!

But we must have something new or we are behind the times, are old foggy. Now we have formaldehyd fumigations; what next? You say, as years ago they said of disinfectants, it kills the germs. Does it? How do you know a living germ remains in the sick room twenty-four hours after the last vestige of the disease is out of the patient? Living germs are in the living patient, and as yet I have seen no positive evidence of their viability lasting forty-eight hours. To fumigate, to clean out your infected apartment, open the doors and windows wide, twenty-four to thirty-six hours, and let the fresh air circulate freely, and the oxygen-laden atmosphere will soon destroy the life of the bacillus. You may take exceptions to this position; I expect you to, but be sure to give the positive proofs to the contrary.

How many physicians make a complete change of outer raiment, or undergo a fumigation after visiting a patient having a contagious disease? Speak out! They may be a little nervous about going to their own homes, to wife and children, but do not hesitate to visit the homes of their patrons. Now don't deny it, you know it is a fact, as well as I.

If contagium can be carried in the clothing then physicians are the most flagrant disseminators of diseases extant. Oh! you do not away down in your better thinking self believe it, and if you do then you are not consistent and I think you are not a scientific observer and investigator. You are thinking and believing as the uneducated, superstitious laymen; folklore and hearsay from your childhood.

Yes, we of this generation have found the specific germs of nearly all diseases the human being is heir to, but just how they are being propagated we know not. Some are being solved and in the course of time all will be.

It is very simple now to understand how yellow fever, cholera, malarial fever, bubonic plague, typhus and typhoid fever are scattered, and we laugh at the strenuous efforts that governments, boards of health and shot-gun quarantine have put forth to circumvent the spread of some of these diseases. The physician of the future, fifty years hence, will smile when reading the literature on contagious diseases in the past; how epidemics of scarlatina, diphtheria, small-pox, measles, etc., were stamped out by our vigilant boards of health and the daily press. My remedy is to isolate the individual, not the house or neighborhood; or send patients to a proper hospital; thoroughly inspect the ears, eyes, nose and throat and body of every inmate in the house of the infected, and isolate any found with the slightest variation from health. Do this every day until they all have passed the period of incubation. It will cost the *Geld*, but not so much as undertakers' bills. The state or county or city should pay all such expenses incurred and in ample amounts.

But the millenium has not come, and is a long ways off, and when all diseases are conquered and no more suffering, and there are no more sick, lame, deaf and blind, then the "earth will be rolled up as a scroll and melted with fervent heat."

I know the great body of medical men will disagree with me (they are in the superstition age yet), criticize me, as being radical and unscientific, and hurl a thousand epithets at me; but remember when so doing facts and proofs first, not theories and popular beliefs. Also remember that the advocates of vaccination were considered crazy heretics in the profession. Remember that the idea that the mosquito, not fomites, was the conveyor of malarial and yellow fevers was laughed at and ridiculed and those who advocated these facts were called visionaries and lunatics. Also remember that men have died sacrificing their lives to demonstrate these facts and it will be done again to demonstrate the fact that fomites do not hold the germs of diseases. And after all the rememberings you may concede that I am right: that living, moving fomites, not dead ones, are the carriers and disseminators of contagious diseases.

I have studied, observed and watched for forty-seven years to find out the way contagious diseases are communicated from person to person; from one locality to another; from one nation to another, and my firm belief and conclusions are as above given. *Errare humanum est.*

"The people (including doctors) that walked in darkness have seen a great light: They that dwell in the land of the shadow of death, upon them hath the light shined." If disease and death should ever be blotted out, and life continued indefinitely, what would the results be? Death is necessary for the existence of the animal world. If no deaths should occur for 500 years the earth could not hold the human race. So death is essential to make room for the coming unborn hordes. It is just as natural to die as to be born. Physicians alleviate human sufferings but very seldom save human life. The credit is due to *vis a tergo*. Nature's pruning hook cuts off the weaklings, giving a better chance for the survival of the fittest.

I have written the above article in order to get a free discussion. I am open to correction and just criticism. My observations for forty-seven years of active practice of medicine have convinced me that we are away off as regards contagious diseases, their propagations and disseminations.

APPENDIX.—I do not believe there ever was a case of tuberculosis caused by drinking bovine milk. Does anyone believe it? Then prove it.

ADDENDA.—Pasteurized milk is a deception and a snare to the human stomach. It is a fraud perpetrated on babyhood, and an insult to the cow. It is productive of more diseases than it prevents.

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## PLEURISY FROM THE MEDICAL STANDPOINT \*

THOMAS E. MACAULEY, M.D.

ELGIN, ILL.

You are called to the bedside of an adult. He gives a history of having had a chill or of feeling chilly, previous to which he was feeling comparatively well. He now complains of a sharp, stabbing or stitch-

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\* Read before the Elgin Physicians Club, Oct. 3, 1910.



like pain in the chest. This pain is increased by movement, or by taking in a full breath. He has a cough that is dry, suppressed and painful, so much so that he endeavors to support or hold his side when he coughs. He may be lying on the side affected or sitting up and leaning forward and to the side involved. Aside from this sharp pain, he feels fairly well and it is largely for its relief that he has called a physician.

You find that he has a temperature of 99.5 to 101 or 102; pulse fast, firm and tense; facial expression of pain and anxiety; respirations increased in frequency, shallow and jerky. Inspection also shows deficiency of movement of chest walls with increased abdominal breathing. Percussion normal. Auscultation reveals a jerky friction rub over some portion of the chest wall. It sounds superficial and close to the ear. You have patient hold his breath, and the rub disappears. Your diagnosis is acute pleurisy without effusion.

In forming your diagnosis you must think of and exclude acute pericarditis, intercostal neuralgia, rheumatism or the intercostal or pectoral muscles, and direct injury to the chest walls. You also endeavor to ascertain if the case is one of primary pleurisy or is secondary to or associated with some other disease.

But suppose this same patient did not call you until he had been ailing several days or a couple of weeks. He gives practically the same subjective history, excepting that now he is comparatively free from pain, his cough is not so frequent or painful and more moist, and that he feels much better than he did some days ago, only that he does not gain in strength, is somewhat short of breath, and breathes better when partly propped up in bed.

What do you find on examination? He may have subnormal, normal or elevated temperature, pulse fast, weak and easily increased in frequency on exertion. Respirations increased with a deficiency of movement in the chest walls, especially on one side. Palpation may show lost vocal fremitus. Percussion shows dullness to absolute flatness over some portions of the chest and hyper-resonance over others. Auscultation, distant, coarse, bronchial or tubular breathing or entire absence of sound. You may get here and there friction rubs at the borders of flatness, especially on deep breathing. The heart sounds are normal, but apex beat is not in normal position.

Again, we will say, your diagnosis is pleurisy—pleurisy with effusion. But before reaching the diagnosis, you must have excluded all pathologic conditions that might present, one or more of the physical findings, for we really reach a diagnosis in most cases by exclusion, that is, we endeavor to prove what it is not. Is it pneumonia with consolidation? Is it a pericarditis with effusion? Is it an aneurism or tumor? Is it an abscess outside of the pleural cavity in the chest walls or in the lung? Is it an effusion secondary to or accompanied with heart, liver or kidney disease, or is it due to a direct extension of some pus lesion elsewhere, bearing in mind that not all cases of pleurisy give a history of pain and that the apex beat may be displaced by solids as well as fluids. And if you are able to exclude all of those possible condi-

tions, something not easy to do, and the details of which I cannot enter into because of limited time, you may want a blood count, a urinalysis or a skiagraph, or you may want time to read up on the subject.

Still holding to your diagnosis of pleurisy with effusion, your next and very important point is to determine the nature of that effusion. Is it serous or is it purulent? How are you going to find out? A leukocytosis, sweats, elevation of temperature, coated tongue and loss of appetite will lead you to suspect pus. Your physical findings prove little. The only reasonably sure plan is to insert a large sized hypodermic needle into the part of most flatness, and you may have to repeat the puncture several times before you find fluid, although you were almost sure it was there, by the physical findings. You withdraw either a more or less lemon colored fluid that coagulates on standing or boiling, or you get pus, empyema. The diagnosis seems easy on paper, but in actual practice you will have done a lot of thinking and a lot of worrying before you reach the surgical side of the question, and those difficulties and worries are greatly increased when the patient is a child or an infant.

Pleurisy in a child is, in a large percentage of cases, accompanied with or secondary to diseases elsewhere, and the coexisting disease will more or less obscure or mask your physical diagnosis. You are less liable to detect a friction rub and you cannot make them hold their breath to differentiate. You are less liable to get a history of pain, and that pain is more apt to be a transferred pain, to abdominal walls about the appendix or umbilicus, and in speaking of transferred pain, remember it may be transferred to the chest when the real lesion is in the abdominal cavity. The differences in the normal physical findings of a child and an adult may mislead you if you are not on your guard. Heavy percussion in a child will not bring out the true findings, you will get a transferred dullness or tympany.

Serous effusion is much less common in childhood, and under three years is quite rare, while on the other hand, purulent effusion is much more common than in the adult, and the rapidity with which the effusion increases will often unpleasantly surprise you. The crying of the child, the fear and discomfort of being handled, the weakness of the patient, along with the almost universal objection of parents to entirely strip the patient's chest of all clothing, tends to make you superficial in your examination and to obscure your diagnosis.

It is in such cases that you stand a very good chance of having a consultant called in, and be shown a chest wall with intercostal depressions obliterated and apex beat where you never supposed it could be. All plain enough, now that your attention has been drawn to it, and you feel as full of mortification as that child's chest is of pus. But you may be mighty thankful if you considered the trouble somewhere in the chest and not as often happens, treating the patient for typhoid or malarial fever or appendicitis or some stomach or bowel trouble.

Your main fault in this case was that you were superficial in your examination, and the few physical findings obtained were not cor-

rectly interpreted. The flatness on the right side you thought was the liver, and the real flatness on the left side you obscured by your heavy percussion, bringing out stomach tympany. Possibly you thought the patient only a little slow in recovering from some previous disease, or some marked disease elsewhere drew your attention from the real trouble. You were careless and in too great a hurry, and you allowed the case to drift along, hoping something more definite would show up, or the patient get well in spite of you and your snap diagnosis.

Quite often the only, and very important duty of a consultant is to lift you out of a rut, and it takes an exceedingly diplomatic consultant to make the family believe that you were doing everything that could be done in this case, and that your diagnosis was correct, and that in every respect you are a shining light in the profession, and yet at the same time give them to understand that your light casts no shadows in his presence.

Medical Treatment: morphin hypodermatically is nearly always called for in the adult in the early stages, in sufficient quantity to relieve the severe pain. Aconite in small doses frequently repeated, in the full-blooded, robust patients. Clean out the system with calomel, followed by a saline. Absolute rest in bed: firmly strap the affected side with adhesive plaster; apply the ice bag or hot water bottle, as most convenient and agreeable to the patient. Other medication will be indicated by the causative factor be it pneumonia, rheumatism or tuberculosis. I do not believe the disease can be aborted by any line of heroic treatment. I have very little faith in the use of potassium iodid for the absorption of the effusion. Good food, good nursing and good hygienic surroundings will do much to aid recovery, and at all times be very cautious of a too depressing form of medication.

When fluid is present in any considerable quantity and does not seem to lessen but rather to increase and embarrass the function of the lungs and heart, it should be withdrawn. If a diagnosis of empyema is proven, the case is at once a surgical consideration.

In infancy and young children you will be less likely to need anodynes, but if needed, use them, guardedly of course. A more supportive line of treatment is indicated, the younger the patient, and a more early withdrawal of the fluid, not only for the comfort and safety of the patient, but because of the early damage of the chest contents. As a rule cold applications will be contra-indicated in young children. If pain is severe or moderate, a good flax-seed poultice, to which is added a small quantity of mustard, will be serviceable to either young or old. A snug bandage about the chest may be used to good advantage instead of strapping, but do not impede the respiratory action too much by such bandage. Keep down tympany by keeping regular and free action of the bowels.

Do not call every pain in the side a pleurisy.



## EDEMA OF THE PROSTATE

G. KOLISCHER, M.D., AND H. KRAUS, M.D.

CHICAGO

Edema of the prostate, rather scantily discussed in the text-books, deserves in fact more consideration. The association of inflammatory edema of the gland with gonorrheal prostatitis (prostatic gonorrhea?) seems to be such a self-evident proposition that writers do not care to go into details about its diagnosis, as if its recognition were of no great clinical importance.

The edema subsides with the disappearance of a prostatitis, as the treatment for the latter will of course influence the former. It is therefore of little practical significance whether such an inflammatory edema is properly diagnosed or just surmised.

Contrary to the acute edema, the chronic edema of the prostate is of great clinical dignity. It is apt to simulate other conditions, especially hypertrophy of the gland; such an oversight would result in grave therapeutic error. Observation proves the occurrence of chronic prostatic edema in elderly persons. Apparently solid tumefactions in the prostates of such individuals vary in consistency and size in examinations made at intervals for some length of time.

Such supposedly hypertrophied glands at certain times will be found reduced to normal size while at other examinations considerable enlargement will be found. Furthermore, careful palpation of prostatic edema will reveal a consistence characteristic of this pathologic condition. These edematous glands do not present the uniformly hard, unyielding consistence of a true hypertrophy, but rather are of a doughy quality. In marked cases the palpating finger tip leaves an impression that lasts for some time. The endoscopic inspection of the rectum, in some pronounced cases, shows the mucosa of the anterior rectal wall edematous and soggy, and its folds are smoothened out.

Energetic palpation of the gland will produce another phenomenon: the pressing finger tip will feel a superficial yielding layer of some thickness and with continued pressure one will finally obtain the sensation of some hard underlying tissue. This is the central part of the gland not swelled by edema. Hence in such cases the increased size of the gland is not due to any addition or growth of firm tissue, but to the imbibition of the organ with fluid, in other words, the intumescence of the prostate is due to edema.

These edemas are of special importance in the age of prostatic hypertrophy on account of their simulating this condition. The swelling of the gland makes the patient conscious of his prostate, he is subject to more or less tenesmus of the rectum, the urinary calls are excessively frequent, the natural passage of urine is difficult, and retention of urine is found in the bladder, in short all the symptoms that point to a pathologic enlargement of the prostate are present.

The possibility of an edematous enlargement must be considered if the symptoms mentioned diminish, or disappear, at times; but this is

not pathognomonic of edema, as the same changes may be observed in true prostatic hypertrophy in which transitory hyperemia may lead to an aggravation of the symptoms, that will ease up after congestion is relieved. If the edema is moderate, and of a more general character, that is, not confined to the superficial parts of the gland, a differential diagnosis between edema and true hypertrophy is very hard to make.

In some cases cystoscopic examination will allow positive diagnosis.

If the cystoscope reveals a solitary, or a multilocular, prostatic tumor protruding into the bladder, and also that the mucosa covering these protuberances is not edematous, then there is no room for doubt that we have to deal with true prostatic hypertrophy. Cystoscopic diagnosis of edema of the mucosa covering a prostatic intumescence does not prove the exclusive existence of prostatic edema, nor does it deny the diagnosis of hypertrophy, as this edema of the mucosa is quite often a feature concomitant with true new formation of tissue, especially if this should be of malignant nature. Occasionally the differential diagnosis between prostatic edema and true hypertrophy can be made only at the time of operation. Then interesting observations may be made.

Cases of edema are now and then found with all the classical symptoms of prostatic enlargement and subsequent urinary obstruction, and, in a degree, calling for operative interference. By the suprapubic method the bladder is opened and the trigonum exposed. Striking changes on the prostatic tumor will be observed. The prostatic intumescence, that has just been felt and seen projecting into the bladder cavity, begins to diminish in size and finally disappears under the eyes of the operator, so that in a short time the internal urethral orifice is flush with the trigonum, without any intervening elevation. We have absolute demonstration of no further existence of urinary obstruction. Finally nothing remains but an insignificant atrophied prostate, that can just be felt and outlined by bimanual palpation, two fingers being placed in the rectum and the other hand palpating from the inside of the bladder, being made accessible through the incision into the anterior wall of the bladder.

Also the thickened, spongy mucosa that covered the prostate in a very few minutes loses its velvety appearance and smoothenes down, regaining its normal slickness and sheen. This latter phenomenon can be demonstrated very clearly if one operated by "blue extremities," a blood-saving method which we lately employ in all genito-urinary operations.

Evidently in these cases, the prostatic intumescence was due to venous engorgement and consecutive edema. The free incision into the bladder wall led to venous depletion, and to draining off the edema. Experience has proved to us, that such a condition may be suspected during the preliminary stages of the operation. Such bladders show on the outside a smoothness of the surfaces. Palpation reveals smoothness of the bladder-wall, and if the bladder is opened no trabeculization of any appreciable degree can be observed. In other words, no labor hypertrophy of the muscular coat is present; such a labor hypertrophy being the result of the numerous attempts of the detrusor to overcome a permanent obstacle to the urinary flow.

Edema of the prostate on account of its periodical disappearance does not furnish such a permanent obstacle as leading to hypertrophy of the muscle bundles which manifests itself either as concentric, or eccentric, hypertrophy of the bladder-wall. The practical consequences of the discovery of the conditions mentioned above, means that the intended prostatectomy has to be abandoned in favor of a simple cystotomy.

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—The Chicago department of health has received a letter from George Shaw Cook regarding the attitude of Christian Scientists toward quarantine of contagious diseases and the enforcement of quarantine regulations by health officers. Mr. Cook was asked to contribute something to the bulletin for publication along these lines. In his letter, which bears date of November 16, he says: "In justice to Christian Scientists as a class I should like to say that it is a rule with them to report contagious diseases to the authorities and to conform strictly to quarantine regulations when such regulations are imposed. Christian Scientists have been requested by Mrs. Eddy to call a physician in cases where contagion is suspected, and, if such cases are pronounced contagious, to see that they are promptly reported to the health board, and Christian Scientists generally are particular to observe state laws regulating such matters. This is because Mrs. Eddy and Christian Scientists as a class are considerate of the feelings of their neighbors who do not believe that contagion is mental."

—The Food Inspection Bureau issues the following note of warning to the dairymen and milk dealers of Chicago: The months during which an increased number of cases and deaths from diphtheria and scarlet fever occur are at hand. The reports on file in this department show that such increases are now actually taking place. As the spread of these diseases is quite commonly due to negligence among those handling the food supplies—especially milk and milk products—your especial attention is directed to the need of *extraordinary* care in this regard, beginning now and continuing through the coming season of cold weather. Your aid is particularly desired in the matter of maintaining proper and efficient quarantine of such cases of these diseases as occur among the dairymen or milk dealers, their employees, families or near neighbors. Protection against the spread of these diseases will be greatly facilitated by *prompt reporting* to this office of *any* existing cases. This Department, through recent experiences in the typhoid situation, has learned to regard the cooperation of milk-wagon drivers as of the greatest assistance in the way of discovering unreported cases in the city. It is the earnest desire of the Department that this valued cooperation shall continue. Milk dealers and their delivery-wagon drivers are asked to report all cases of these diseases which may be discovered on their routes, especially those in premises which fail to bear the contagious disease warning placard. Such cooperation will not only afford better protection to the public, but will also be of undoubted benefit to the milk trade itself. A wise milkman will readily understand that an unreported and therefore uncontrolled case of contagious disease on his route is a distinct menace to his whole trade.

—*From Bulletin, Chicago Department of Health.*



# ILLINOIS MEDICAL JOURNAL

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JANUARY, 1911

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## WHAT ILLINOIS NEEDS IN MEDICAL EDUCATION

The Physicians' Club of Chicago, on Friday evening, Dec. 2, 1910, dedicated a meeting to the topic "What Illinois Needs in Medical Education." From those in attendance we learn that the meeting was a success in every way, and subjects of fundamental importance were discussed. The main address was given by Dr. Edmund J. James, President of the University of Illinois, and it is to this address that we now call particular attention. It appears on another page.

First of all Dr. James laid down the great principles of organized society especially as they refer to the practice of medicine. He pays a tribute to that grand product of the University of Pennsylvania, the late Dr. William Pepper, properly designated as one of the most far-sighted and one of the most truly statesmen-like medical men who ever lived. From Dr. Pepper and Prof. Lorenz Von Stein, of the University of Vienna, Dr. James has fortunately drawn much of his inspiration which seems destined to do great things for the cause of medical education in the new world. For we do not, by any means, confine the influence, which now seems ready for development, to the city of Chicago, or the State of Illinois. We have always believed that this state holds a paramount position with reference to the educational progress of the new world, and it

is for this reason that we have so strongly protested against the low standards and petty politics which have influenced the authorities in this state for the past eighteen years.

Dr. James in the following language lays down three important propositions which should always be held up as the ideals to be attained in the medical profession.

"I maintain first of all that the future physician should be an educated and cultured gentlemen, able to do his part as a thoughtful citizen of a democracy in the support and development of our social and political institutions

"I maintain that the physicians above all other men, not even excepting the clergymen, if of the right type and inspired by the right ideals, might do more to raise social and ethical standards than the members of any other profession.

"I emphasize the consideration, that if we were ever to have a reasonable policy in regard to public health, we must rely for expert advice on the physician, and unless he were an educated man, aside from his profession, unless he had a broad outlook and wide vision he would be an unsafe counselor in all these public matters.

"I urge again the same consideration from a little different point of view, namely, that the medical profession as such is the keeper, the protector and the promoter of some of the most important and far-reaching interests of society and that the members of such a profession, if it is to do its duty toward the community and the sacred interests dependent on it, must have the education, the training, the culture necessary to perform efficiently this great social duty.

"Some people distinguish between the scientifically and the practically educated physician. I cannot for my part concede that there is or ought to be any such distinction."

Dr. James' idea of the duty of the university towards the state was expressed in the following language: "If the university will set before the community, therefore, and insist on this standard of, first of all, a liberal education; secondly, a thoroughly scientific training; thirdly, a practical training, then it will have done all it can toward preparing and sustaining a medical profession for this great work in the community and the state.

"It goes without saying that hospitals and clinics and dispensaries are necessary elements of this training. It also goes without the saying that hospitals organized for the purpose of investigation and teaching are undoubtedly for certain purposes far better in this scheme of medical training than hospitals which do not contemplate as a serious part of their work either of these ends."

Dr. James explains the failures of the medical department in the following language: "Owing to certain clauses in the contract it was difficult for either the university or the College of Physicians and Surgeons to take a very aggressive attitude in advancing standards; but of

course the real difficulty was that neither institution had any money to put into the enterprise. The whole experiment was dependent absolutely on the income from student fees.

"The experience of the last fifteen years has demonstrated beyond a doubt that a modern medical school cannot be established and maintained on any such basis, and the time has come therefore, in the opinion of the university and of the College of Physicians and Surgeons, when a change was absolutely imperative. With the consent, indeed one may say, upon the initiation of the College of Physicians and Surgeons, the contract made ten years ago has been absolutely abolished and the medical school has passed as completely into the control of the board of trustees of the University of Illinois as is the school of engineering or the school of agriculture.

"The university has leased from the College of Physicians and Surgeons their property on the west side as a plant for the use of its medical school. This lease runs for one year and may be renewed on the same terms for two two-year periods. The University pays the College of Physicians and Surgeons a rental for the use of this property which is based, roughly speaking, on the necessity of meeting the interest charges involved in mortgage and bonds secured by the property, and taxes, insurance, etc., and certain floating and now due indebtedness."

Regarding the development of the medical department Dr. James says: "The only thing that one can say is that the trustees, if they get this money, will use it to develop the best medical school they can with these resources. What particular things they will do must be decided by them when the money is at their disposal.

"I should guess that they would organize a strong force of professional teachers to handle the scientific subjects in the school course such as anatomy, physiology, chemistry, pathology, etc. I should guess that they would bring to the city of Chicago or find them here a group of men whose cooperation in this work would raise perceptibly the level of scientific work in the field of medicine in the city of Chicago.

"In a word, I should guess that the outcome of this appropriation would be the beginning of new things in medical education, not only in the University of Illinois but in the City of Chicago, the State of Illinois and indeed the whole Mississippi Valley.

"If the commonwealth of Illinois will begin the policy of supporting medical research and medical training through the University of Illinois, I believe we shall have made another great step forward toward the time when the city of Chicago will be a recognized center of medical research, medical training and medical skill second to none in this country or indeed to the world."

This proposition is now up to the state, the people and the medical profession and we trust will have the hearty support of the members of the Illinois State Medical Society.



THE EXAMINATION OF APPLICANTS FOR LICENSE TO PRACTICE MEDICINE  
AND SURGERY IN ILLINOIS

As indicated by the statements printed below, a remarkable variation from the usual has taken place in the examinations for license to practice in Illinois. In order that our readers may be conversant with the latest development, we reprint first, a table giving the results of all examinations held by the board for the past nine years, together with a summary of examinations for nine years. Second, the statement of Dr. Egan as it appeared in the *State Register* of Springfield. Third, comments on the result of this examination made by the *Chicago Tribune* under the heading "A Poor Showing." The figures mentioned in the *Tribune* refer only to the Chicago medical colleges represented in this examination. Fourth, an editorial in the *Chicago Tribune*, under the heading, "Graft in a Great Profession," and bearing directly on the laxity of the board in granting license to practice.

According to the headlines in Dr. Egan's communication as it appears in the *Illinois State Register*, 55 per cent. of those examined failed to pass. In the text it is stated that 45 per cent. failed to pass. The October, 1910, Bulletin of the State Board of Health, just received, on page 364 contains the following statement of the October examination: Present 80; passed 34; failed 41; incomplete 5. If the mysterious five are counted, the percentage of rejections was 53.3 +. Such contradictions are not infrequently found in the statements issued from the office of the State Board of Health. It is boldly stated that while "Illinois rejects a greater number than other leading states, the percentage rarely goes over 25 per cent. and usually ranges from 10 to 20 per cent." It would be interesting to have the secretary explain the sudden increase from 25 to 56.6 per cent. As the *Chicago Tribune* remarks editorially, there are strong reasons for believing that the report of the Carnegie Foundation, stigmatized time and again by Dr. Egan as a pack of lies, has had much to do with stimulating the board to do its duty.

It has not been an easy matter to compile the statistics of the results of the examinations held by the Illinois State Board of Health since 1897, when Dr. Egan first took office in that organization. As far as we know, no public statement of the work of the board in licensing physicians appeared until 1902. In 1903 a report on Medical Education was issued by Dr. Egan, and on page XLI we find that in 1902, 589 persons were licensed, thirteen rejected and one endorsed. The percentage of rejections this year was therefore exactly 2.2 per cent. This is one of the few straightforward statements we have been able to find. In numerous other instances the reports submitted by the secretary to the *Journal of the American Medical Association*, do not correspond with the statements made in the *Bulletin* of the State Board of Health, issued semi-occasionally by the board, or to the statements made in the alleged annual reports which have been submitted from time to time by the secretary to the governor since 1903. The last of these annual reports which

we have been able to see is dedicated to the years 1907 and 1908. Besides it is a well known fact that a number of private examinations are given in the secretary's office, which do not seem to appear in the reports submitted to the *Journal of the American Medical Association*. They may appear in the *Bulletin*, but if so, they are so covered up as to make it absolutely impossible to tell anything about them. We are therefore compelled to apologize to our readers for the incompleteness of the tables here submitted. We are unfortunately compelled to draw our conclusions from these defective sources. Enough is shown, however, to prove conclusively that the statements made by Dr. Egan, are calculated to give a very different impression from that warranted by the facts. The facts as shown by the tables are, that not until 1908, did the rejections at any single examination amount to more than 24.6 per cent. About this time (1908) the pressure from such sources as the Committees on Medical Education of the American Medical Association, and the Illinois State Medical Society, became so insistent for greater care in granting licenses, that the board seems to have yielded somewhat, and a larger percentage of rejections has resulted in the past two years. The percentage of rejections in 1910 and 1909 has been exceptionally high for the Illinois Board and have at no time fallen below 9.2 per cent. at any single examination. The percentage of rejections for the entire year of 1909 was 17 per cent., and for 1910, including the much heralded October examination, was 18.1 per cent., excluding the October examination it was only 12.8.

In view of the frequent and drastic criticisms of the medical profession and medical schools in Illinois appearing almost daily in the secular press, it becomes painfully apparent as to who is the guilty party in giving Illinois such a bad reputation. We are only too glad to see that the laity are waking up and demanding that conditions be improved. We hope our readers will draw their own conclusions on this matter and act accordingly.

RESULTS OF EXAMINATIONS HELD BY THE ILLINOIS STATE BOARD OF  
HEALTH FROM 1902 TO 1910, INCLUSIVE:

		1902				Source of Information.
Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	
.....	.....	589	576	13	2.2	Report of S. B. H.
		1903				Source of Information.
Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	
January 15.....	Chicago.....	48	43	5	10.4	J. A. M. A. xl, 1666.
May-June 1-3. (No report of this examination can be found.)						
July 22.....	.....	153	149	4	2.6	Jour. A. M. A., xl
October 21.....	.....	49	43	6	12.3	Jour. A. M. A., xl.
		250	235	15	6.0	

## 1904

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 27.....	Chicago.....	45	44	1	2.2	Jour. A. M. A.
April 25.....	Chicago.....	348	340	8	2.3	Jour. A. M. A.
May 4-6.....	E. St. Louis..	110	100	1	0.9	Jour. A. M. A.
June .....	Chicago .....	43	34	9	21.0	Jour. A. M. A.
October 12.....	Chicago .....	60	53	7	11.6	Jour. A. M. A.
		606	571	26	4.2	

1. May 4-6, East St. Louis. Secretary reports 110 examined, 100 passed, 1 failed, 4 were withheld pending investigation of college by the Board, 1 rejected on account of copying notes, 4 withdrew.

## 1905

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 2.....	Chicago.....	45	34	5	12.8	J. A. M. A., xlv.
April 12.....	Chicago.....	38	33	5	13.2	J. A. M. A., xlv.
May 2.....	Chicago.....	417	410	7	1.7	J. A. M. A., xlv.
May 10.....	E. St. Louis..	124	119	5	4.0	J. A. M. A., xlv.
July 19-21.....	Chicago .....	119	111	7	5.8	1 incomplete.
October .....	Chicago .....	61	52	6	10.3	2 not rated; 1 withdrawn.
		804	758	35	4.3	

2. Egan's Bulletin, Vol. 2, No. 2, gives number as 39.

4. The report of 1904 of the secretary to the governor would indicate that there were 823 applicants and 781 were successful; 42, or almost exactly 5 per cent., were rejected.

## 1906

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 18-20...	Chicago.....	27	21	6	22.2	J. A. M. A., xlv.
March.....	Springfield...	4	4	0	0	6 incomplete.
April 18-20.....	Chicago.....	125	115	6	5	J. A. M. A., xlv.
May 23-25*.....	Chicago.....	394	373	21	5.5	J. A. M. A., xlvii.
May 2-4.....	E. St. Louis..	136	114	22	16.2	J. A. M. A., xlvii.
July 11-13.....	Chicago .....	76	66	9	12	1 incomplete.
October.....	Chicago .....	76	59	10	14.5	J. A. M. A., xlvii.
Total for year.....		838	752	74	9.0	

\* Bulletin states 374 passed, 16 failed.

† Bulletin states 136 were examined.

5. Probably examinations made in secretary's office.

6. The Board of Health Bulletin, vol. iii, p. 194, indicates that there were present 76; passed, 65; failed, 10. The Journal of the A. M. A., Feb. 2, 1907, page 448, contains a statement from J. A. Egan in which the total examined were 76; 59 passed, 10 failed; 7 did not complete examination.

7. The report of the Board for this year, made to the governor, would indicate that there were 848 applicants for certificates; 775 were successful, and 73, or about 9½ per cent., were not successful.

## 1907

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January .....	Chicago .....	36	31	4	11.4	1 application declined.
April 17-18-19..	Chicago.....	40	31	9	22.5	Egan's Bull. says 10 failed.
May .....	E. St. Louis..	104	97	7	6.7	Egan's Bull.: 105 present; passed, 99; failed, 6.
June .....	Chicago .....	338	320	18	5.3	J. A. M. A., xlix.
July .....	Chicago .....	63	50	10	6	3 incomplete.
October .....	Chicago .....	57	51	5	8.9	J. A. M. A., xlix.
Total for year.....		638	580	53	8.3	

## 1908

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January .....	Chicago.....	29	23	6	20.7	.....
April .....	Chicago.....	54	48	6	11	.....
May 12.....	E. St. Louis..	167	136	29	17.6	2 incomplete.
June 24.....	Chicago .....	362	326	34	9.4	2 incomplete.
July 23.....	Chicago .....	63	46	15	24.6	2 incomplete.
October 21.....	Chicago .....	79	61	18	22.8	J. A. M. A., li.
Total for year.....		8754	640	108	14.5	

8. The report of the secretary for the years 1907-1908, made to the governor, would indicate that during these two years 1,411 applicants were examined for license, but no statement is made as to the number passed and rejected. Our tables for these years only account for 754 and 640. Total, 1,394.



## 1909

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 18.....	Chicago .....	45	21	23	52.3	1 incomplete.
April 15-17.....	Chicago .....	126	111	12	9.8	1 withdrew.
May .....	E. St. Louis..	133	115	18	13.6	J. A. M. A., lii.
June .....	Chicago.....	291	263	27	9.3	1 withdrew.
July 20-22.....	Chicago.....	107	83	24	22.4	J. A. M. A., liii.
October .....	Chicago.....	84	52	31	37.3	J. A. M. A., liii.
		786	645	135	17.3	

## 1910

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January .....	Chicago.....	52	1031	17	35.4	1 withdrew.
April .....	Chicago.....	125	107	17	13.6	J. A. M. A., liv.
May 10-12.....	E. St. Louis..	116	100	13	11.5	2 incomplete; 1 withdrew.
June 9-11.....	Chicago .....	260	236	24	9.2	J. A. M. A., lv.
October <sup>13</sup> .....	Chicago.....	76	33	43	56.5	J. A. M. A., lv.
		<sup>12</sup> 629	507	114	18.1	

10. Egan's Bulletin says 34 passed.

11. Reported in Illinois State Register of Dec. 4, 1910. S. B. H. Bulletin, vol. vi, p. 364, gives 80 present; 34 passed, 41 failed, 5 incomplete. Per cent., 54.6.

12. Total for 1910, excluding October report: examined, 553; 474 passed, 71 failed; percentage, 12.8.

## SUMMARY OF EXAMINATIONS FOR NINE YEARS

## FROM PRECEDING REPORTS

Year	Examined	Passed	Rejected	Per cent. rejected
1902	589	576	13	2.2
<sup>13</sup> 1903	250	235	15	6.0
1904	606	571	26	4.3
1905	804	759	35	4.4
1906	638	752	74	9.0
1907	638	580	53	8.3
1908	754	640	108	14.5
1909	786	645	135	17.3
1910	629	507	114	18.1
	5,694	5,265	<sup>14</sup> 573	10.7

13. Report for 1903, obviously incomplete.

14. No account is made of incomplected examinations or candidates who withdrew.

## FROM STATISTICS PUBLISHED IN THE JOUR. A. M. A.\*

Year	Examined	Passed	Rejected	Per cent. rejected	Source
1903	†594	559	35	5.9	J. A. M. A., xliii, 516
1904	762	728	34	4.5	J. A. M. A., xlv, 1476
1905	795	759	36	4.5	J. A. M. A., xlvii, 612
1906	817	748	69	8.4	J. A. M. A., xlviii, 1766
1907	632	580	52	8.2	J. A. M. A., l, 1850
1908	742	646	96	12.9	J. A. M. A., lii, 1700
1909	762	645	117	15.4	J. A. M. A., liv, 1742

\* Said to include other reports and some corrections which were not published separately.

† Reports of one or two examinations missing.

## MANY PHYSICIANS FAIL EXAMINATION

## FIFTY-FIVE PER CENT. OF THOSE EXAMINED BY THE STATE BOARD OF HEALTH LAST MONTH FAILED

(From Illinois State Register)

An announcement of the results of the examination of physicians held by the Illinois State Board of Health last month shows that out of the seventy-five physicians who appeared before it, 45 per cent. failed to pass the examination. This percentage of failures is much higher than usual. While the Illinois board rejects a much

greater number than other leading states, the percentage of failures rarely goes over twenty-five, and usually ranges from ten to twenty.

The following is a list of the medical colleges represented in the examination and those who failed to pass:

Chicago: Bennett Medical College passed two, failed three; Chicago College of Medicine and Surgery, passed three, failed three; College of Medicine and Surgery, passed one, failed six; Hahnemann Medical College, passed one; Hering Medical College, failed one; Jenner Medical College, passed two, failed two; Loyola University, passed one, failed two; Northwestern University, passed two; National University, failed two; College of Physicians and Surgeons, passed eight, failed five; Reliance Medical College, passed two, failed two; Rush Medical College, passed two.

Outside of Illinois: Boston University, passed one; Barnes University, St. Louis, failed five; Harvard University, passed one; Indiana University, passed one; Hospital Medical College, Louisville, failed one; Keokuk Medical College, failed one; Louisville Hospital College, failed one; Meharry Medical College, Tennessee, passed one, failed one; College of Physicians and Surgeons, St. Louis, passed one, failed four; Sioux City Medical College, failed one; St. Louis University, failed one; University of Arkansas, failed one; University of Berlin, passed one; University of Buffalo, passed one; University of Maryland, passed one; Washington University, St. Louis, passed one.

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#### A POOR SHOWING

*(From the Chicago Tribune)*

Last week fifty would-be doctors who had studied in Chicago medical colleges were examined by the Illinois State Board of Health. Twenty-six of them failed to pass the examination. It is safe to assume that of the twenty-four successful candidates some barely got through.

The high percentage of failures is not calculated to give one an exalted idea of the merits of the medical institutions of the state taken as a whole. But for the interposition of the State Board of Health they would among them have inflicted on the community twenty-six manifestly unfit physicians or surgeons. This bad showing calls to mind Dr. Abraham Flexner's sharp criticism of the Chicago medical schools. There were vehement denials of the justice of his comments but we find evidence of their truthfulness in the failure of these schools to turn out a larger percentage of competent men.

It is said that the Illinois State Board of Health rejects a greater number of applicants than other leading states. That may be due to the inferior quality of candidates or to a more rigid examination. We hope it is the latter. It is said also that the percentage of failures this year is much greater than usual. Can it be that the board has taken to heart

the strictures of Dr. Flexner—he criticized it, also—and has adopted higher standards? That would be welcome intelligence. The board could, if it would, raise the standard so high as ultimately to gain for Illinois exemption from that worst of scourges, a multitude of incapable doctors. A bad lawyer may lose a man his suit or a bad banker take his money. A bad doctor may take both his money and his life.

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#### GRAFT IN A GREAT PROFESSION

(From the *Chicago Tribune*)

In a striking interview in the *Daily News*, a surgeon, who does not permit the use of his name, emphatically endorses recent charges of “graft” in the profession, notably that of Dr. John P. Lord of Omaha, president of the Western Surgical Association, in an address, and Dr. Norman Barnesby in a book which has caused something of a sensation.

It is not a profitable or pleasant task thus to arraign one’s own profession. But it is the exercise of a high duty, and one for which we all should be grateful.

And in the opinion of the *Tribune* the situation calls for such drastic treatment. The commercialization of the profession of medicine and surgery has been, we suppose, inevitable, considering the social conditions of American life in the last half century. The old ideal of service, the spirit which sent the typical doctor of the old school into the cabin or the hovel as readily as into the palace, is by no means departed. There are men—and the *Tribune* could name some of them—whose reputation is international, who do more work without pay than with it. There are thousands of doctors and surgeons throughout the country who are giving their lives as generously and unselfishly to the amelioration of human suffering as any of their predecessors. But all the more reason is there that the standard they maintain for one of the noblest of occupations should not be dragged down by the horde of self-seekers and worse. There is no reason why a doctor or surgeon should not exact pay as the lawyer, the soldier, the clergyman, the clerk, the mechanic, or the banker does.

But it would be a tremendous loss to the profession and to our American life if the professional ideal was submerged by an unmitigated commercialism. Yet the charge is worse. It is not only that the money factor has grown. It has become perverted by outright deceit and covert extortion. The source of this evil is not merely apparent in business. There can be no question that the “diploma mill,” the unscrupulous turning out on the public of untrained, undisciplined hundreds, is a direct cause. Young men are launched on practice without the necessary general preparation, without the discipline which comes from exacting study in an atmosphere of serious and self-respecting labor, without



proper association or the development of a responsible ethical sense. It is often said by candid lawyers that the ethics of legal practice has been lowered of late years, especially in the service of exigent corporate needs. The remedy in both cases must come in the main from within the profession, but the general social awakening in America will help almost as much.

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### FEES OF THE ILLINOIS STATE BOARD OF HEALTH

Hon. W. H. Stead, attorney-general, in his biennial report to the governor, makes the following statement concerning boards and commissions. This we believe will be of interest to our readers for several reasons, especially that referring to the creation of new boards and in the part referring to the charges and collection of fees by the different boards. It is a well known fact that the Illinois State Board of Health charges and collects fees for which no accounting is made to the state of moneys collected. It is also common report that a high official of the state apparently tried to secure legislation which would compel an accounting for moneys collected from various sources by the State Board of Health, but was unable to have this bill passed at the last general assembly. In view of the attitude of the attorney-general, another strenuous attempt to pass a bill would seem to be in order. We quote the following:

In the execution of the laws, boards, commissions and administrative departments are essential. Contemplating, however, the great number and variety of boards and commissions which have been created by recent statutes, the advisability or necessity of creating any more is exceedingly doubtful. No reason exists why the powers and duties of existing boards and commissions cannot be enlarged and extended and that, too, with but little additional expense. Furthermore, the advisability of consolidating the different boards and commissions performing related and analogous duties is worthy of serious consideration.

Many of the present boards and commissions are vested with authority to charge and collect fees for the performance of given services, and out of these fees pay salaries and expenses. In some cases no provision is made for an accounting to the State of the moneys collected. The officers of these boards and commissions are public officers of the State, and the fees collected by them constitute a part of the public moneys of the State.

Under the system now prevailing, there is no practical means of ascertaining either the total income of the State and from what sources, or the total expenditures of the State and for what purposes. Every dollar of fees or public moneys collected or received by these various departments, boards and commissions should be covered into the State treasury, through the office of the Auditor of Public Accounts, and no expenditures, either for salaries or any other purposes, should be made by them, except as authorized biennially by appropriation acts of the General Assembly. In this way, and in this way only, can the citizen and taxpayer be informed of the exact financial condition of the State. Furthermore, in my opinion, any other method of transacting the business of these departments, boards and commissions violates both the letter and spirit of our Constitution. In a forthcoming opinion to the Senate, to be rendered in compliance with Senate Resolution Number 9 (Forty-Sixth General Assembly, Special Session), I shall discuss the question at greater length.

## MALPRACTICE SUITS IN SANGAMON AND McLEAN COUNTIES

Central Illinois is having an epidemic of suits for surgical malpractice at the present term of the various courts. For the third time a jury has brought in a verdict averse to Dr. E. Mammen, President of the McLean County Medical Society. It is believed by many that such a prejudice exists against physicians in this county, that it will be impossible for the Doctor to win his suit no matter what the evidence might be in his favor. We understand it is the intention of Dr. Mammen to carry this verdict to a higher court with almost a certainty of its being remanded for retrial as in previous cases. It is said that a second suit for malpractice is pending in McLean County, the allegation stating that a hot water bag caused a burn and resulted in keloid.

In Sangamon County the suit of Clifford against Dr. Walter Ryan came to trial, and after a bitter contest the jury stood six to six. Attorneys for the prosecution are reported as being unwilling to undertake another suit.

The case of Hahn against Dr. A. W. Barker of Springfield resulted in a verdict for the defendant. Several other suits, probably five or six in all, are on the docket of the Sangamon County Circuit Court. As a result of these numerous prosecutions medical men are taking hold of accident cases very unwillingly, and many practitioners absolutely refuse to handle fractures and accidents in which there is any likelihood of a suit for damages. The assistance given by the committee of the State Society in several of these cases has been of the utmost value, and much appreciated by those involved.

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## NOTICE

### NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS

The National Confederation of State Medical Examining and Licensing Boards will hold its twenty-first annual meeting in Chicago, Tuesday, Feb. 28, 1911, at the Congress Hotel.

The subjects to be taken up at this meeting will be a consideration of the state control of medical colleges; a report by a special committee on clinical instruction; a report on a proposed materia medica list by a special committee; the report on a paper presented at the St. Louis meeting by Mr. Abraham Flexner of the Carnegie Foundation for the Advancement of Teaching; and some special papers on such subjects as the regulation of medical colleges, necessity for establishing a rational curriculum for the medical degree, and others, by men eminently qualified to prepare papers on such subjects.

These topics are all of practical and vital interest to medical colleges, medical examining boards, the profession at large and the public. The symposium will be composed of ten papers and be presented from the viewpoints of state, law, *medical colleges, state medical examining and*

*licensing boards and the medical profession.* The contributors of papers to the symposium on state control of medical colleges are men of the highest attainments in matters pertaining to state, law and the medical profession, and their production will be worthy of the most careful consideration. The chief object of the symposium is to determine, as far as possible, the feasibility of placing medical colleges under state control. The special committee on materia medica made a report at the St. Louis meeting of the confederation June 6, 1910, and it was continued and instructed to report again at the next annual meeting of the confederation in 1911. The report of this committee made at St. Louis has received very favorable comment by many of the editors of medical journals, and should receive at the Chicago meeting extended and careful consideration. The report on Mr. Flexner's paper is published in the Proceedings of the St. Louis meeting of the confederation, page 64, and will be open for discussion at the Chicago meeting.

An earnest and cordial invitation to this meeting is extended to all members of state medical examining and licensing boards, teachers in medical schools, colleges and universities, delegates to the association of American medical colleges, to the Council on Medical Education of the A. M. A., and to all others interested in securing the best results in medical education.

The officers of the confederation are: president, J. C. Guernsey, M.D., 1923 Chestnut Street, Philadelphia; secretary-treasurer, George H. Matson, M.D., State House, Columbus, Ohio.

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## INDEX FOR THE EIGHTEENTH VOLUME

The index for the last volume, which should have appeared with our December issue, will be found incorporated with this issue of *THE JOURNAL*. For certain reasons, through no fault of the editors, it seems impossible to prepare a complete index at the proper time without greatly delaying the issuing of *THE JOURNAL*. This index is supplied by the indexer of the Morgan County Society and is very complete. Our readers will therefore take notice of the appearance of the index at this time, and inform the binders where it may be found.

While speaking of *THE JOURNAL*, we have a call for the Transactions of the Illinois State Medical Society for the years 1896, 1897, 1898. These volumes for the library of the College of Physicians of Philadelphia. Any of our members knowing where these Transactions may be obtained will please communicate with the Editor's office.

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## Scientific Editorial

### DEVELOPMENT OF RADIOGRAPHY

The wonderful discovery of Professor Roentgen that Crooke's tubes, which had formerly been used as scientific playthings, were capable under certain conditions of developing a light which penetrated the structures of the human body, marked an era in the science of medicine



and surgery. Great things were predicted for the new discovery, but only now after fifteen years is there the full realization of the vast possibilities of radiography. We are also at last learning its dangers and limitations.

The original tubes were about the size and shape of an ostrich egg and were very simple affairs. To-day the perfected tubes used for radiography are marvels of the glass blower's art. The light emanating from them is as the arc light to the candle of the small, primitive tube. The tubes can be rendered hard or soft at will, and a third wire serves to take up the inverse rays.

The first device used for generating the electric fluid was the static machine. Very soon these machines were magnified to contain twenty-four and even thirty plates revolved by electric power at a rapid speed, and generated a light which for the time was wonderful. In a few years a static machine of larger or smaller size lent its imposing presence to the office of nearly every ambitious practitioner in the country. "Mail-order surgical implement houses" manufactured them by the score. The plates, however, were prone to go awry and wobbled on the spindle. Damp weather affected their generating power. Turning the crank was tiresome business when there was no other power to be obtained. Soon the ponderous static machine lost its charm, it became covered with dust and cobwebs and was relegated to the scrap heap. Most of them can be had for the asking.

Next came the coil with the electrolytic or mercury interrupter, and with it a considerable improvement in the possibilities of radiography. Faults were soon discovered in this machine. Among them are (1) a variation in the intensity of the current; (2) difficulty of generating a current of high amperage; (3) slowness of the interruption; (4) formation of secondary rays.

Finally has come the interrupterless machine also known as the Snook type. The construction of this machine is a triumph of technical skill, and the credit belongs to American electrical engineers. One of them, Lemp, as early as 1897 obtained a patent on a primitive type of this machine which contained the essential principles of the Snook generator. Snook obtained his patent of a perfected type late in the year 1908, and has constructed a machine of extraordinary practicability. This consists of (1) a motor generator of two to four kilo-watt capacity, (2) a step-up transformer, and (3) a high-tension commutator. Numbers one and three are mounted on the same shaft, and revolve at the rate of 1,800 to 2,000 times per minute. The high-tension rectifier is, therefore, synchronous with the alternating current furnished by the motor generator to the step-up transformer. Snook places numbers one and three on a stand. A considerable improvement in the construction has been made by placing the generator and the commutator on the floor instead of on a stand. In the improved apparatus the step-up transformer is placed on a stand.

The current delivered to the *x*-ray tube by the Snook-type machine is unidirectional and pulsating and is much less destructive of tubes

than the alternating discharge from an ordinary induction coil. The direct current is best adapted for this machine. Certain operators seem to have had some difficulty with tubes, but as far as our observation goes there has been no difficulty of this kind.

The Snook-type machine of 4 kilo-watt capacity permits the taking of radiograms in the smallest possible time. Whether it is possible to take a picture of the lungs between heart beats, that is in one-seventieth of a second, we are not prepared to say, but that it shortens the time of exposure is very certain. For instance, the hip now can be taken in from two to ten seconds, the thorax in two to three seconds. Such a picture also shows the structures of the bones and tissues much better than the old type of machine, and is less destructive of the tube. The problem of making instantaneous radiograms, that is of one-one-hundredth of a second exposure, if not completely solved is on the eve of solution. In such a radiogram the heart, the diaphragm, the posterior and anterior ribs are shown as if sketched with a lead pencil. The substance of the kidney can be differentiated from the pelvis. Gall-stones can be detected. Another great advance is the stereoscopic picture. The technic of taking stereoscopic radiograms is too complicated to be described in this article. Those who have not seen the latest development of the *x-ray* machine have something marvelous in store for them. The cost of the apparatus is from \$1,000 to \$1,200, and while the price may seem high it may be a blessing after all if it limits the use of the *x-ray* light to those who make a study of the subject, prepare themselves for making the best radiograms and protect themselves from the rays while working with the machine.

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## RESOLUTIONS

*To the councilors and members of the Chicago Medical Society:—At the next meeting of the council I propose to submit the following preamble and resolutions:*

WHEREAS, The present method of electing the councilors of the Illinois State Medical Society is unfair and undemocratic and tends to restrict the control of the Society to the few in direct opposition to the principle of self-government; therefore be it

*Resolved*, That in the opinion of the Chicago Medical Society provision should be made in the Constitution and By-Laws for the election of a councilor by and for each district of the Illinois State Medical Society; and be it further

*Resolved*, That the delegates from the Chicago Medical Society to the House of Delegates to the Illinois State Medical Society hereby are instructed to make every effort to bring about such changes in the Constitution and By-Laws of the State Society; and be it further

*Resolved*, That a copy of this preamble and resolutions be published in the *Bulletin* and be submitted for publication to the *Journal of the American Medical Association* and to the ILLINOIS MEDICAL JOURNAL.

(Signed)

HENRY F. LEWIS.

The following resolutions were passed at the December meeting of the Chicago Medical Society:

WHEREAS, Certain charges against and criticisms of the State Board of Health having been set forth in the public press and elsewhere; and

WHEREAS, Dr. James A. Egan, the Secretary of the State Board of Health, having formally requested the Chicago Medical Society to investigate these charges; and

WHEREAS, These charges and criticisms having been made by certain persons apparently actuated by partisan political motives, or by animus based on the fact that they have been disciplined by the State Board for infraction of the laws of the State of Illinois; and

WHEREAS, These charges and criticisms having thus far been unsupported by competent evidence and having been ignored by the proper legal authorities to whom the State Board is responsible for its integrity and the proper conduct of its office; and

WHEREAS, The Chicago Medical Society has no official jurisdiction over the State Board of Health or the members thereof; therefore be it

*Resolved*, That it is the sense of the Council of the Chicago Medical Society that any official action on its part on the question of the attacks made on the State Board would be undignified and unjustified by the powers of this body as well as an implied reflection on the State Board, which would be unwarranted by any evidence thus far submitted against said board; and be it further

*Resolved*, That a copy of this preamble and resolutions be published in the *Bulletin* and submitted for publication to the ILLINOIS MEDICAL JOURNAL and to the *Journal of the American Medical Association*, and that the Secretary be instructed to send a copy of this preamble and resolutions to the Secretary of the State Board of Health.

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## Special Article

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### THE RELATION OF THE UNIVERSITY OF ILLINOIS TO MEDICAL EDUCATION \*

DR. EDMUND J. JAMES

President of the University of Illinois

Gentlemen: When your committee asked me to address the club this evening, I got the impression that I was to talk on the relation of the University of Illinois to medical education. I note that the topic on the printed program is of much wider scope than that, namely, "What Illinois Needs in Medical Education." As there are, however, other speakers who will doubtless discuss other phases of the subject, I feel that I may properly enough limit myself to the topic I had in mind, namely, "The Relation of the University of Illinois to Medical Education."

I take it that this relation is at bottom none other than that which every institution which undertakes the work of medical education at all should have, and none other than that which should be taken by an institution like a state university which is reaching out to answer in a comprehensive way the needs of the commonwealth in the realm of higher

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\* Abstract of Address before the Physicians' Club of Chicago, Friday evening, Dec. 2, 1910.



education. I may therefore properly enough advance one or two general considerations as a basis for my remarks, before proceeding to their immediate application to the University of Illinois.

I became interested in the subject of medical education a generation ago—to be exact, thirty-five years ago—when a student of public administration in a German university. In studying the function of the state in its relation to the life of its citizens under the tutelage of the great Lorenz von Stein of the University of Vienna, we were compelled to take a broad view of human society and of its relations to the political organization called the state. Stein's lectures on public administration included among other things an extensive survey of the relation of the state to medicine, and I think that even our medical men of to-day would profit by a course of historical study in this department of political science; for an accurate history of the relation of the state and the government to private and public health serves to set forth certain definite facts in such a clear light that the resulting inference as to what is a proper policy in certain matters at any rate, is all-compelling in its force and would bring all men to think alike on certain fundamental aspects of this very important question.

The state, i. e., organized society, is greatly interested in the subject of the health of its citizens individually and collectively; if from no other point of view, simply because good health on the part of the body physical is the basis of any good health in the body politic or body social. The welfare of the community as a whole depends in the last analysis on the condition of the physical health of the individual citizens which make up the community. This fact has been recognized for a long time. The resulting corollary is plain, that if the state can do anything to preserve and improve the state of health on the part of its citizens, it is bound to do it, just as any prudent housekeeper is bound to look after the conditions of the permanency and persistence of the household. Human beings learned early in the history of government that the health of the citizen depended very largely on a sound sanitary policy on the part of the state, though there were differences of opinion as to what this sound sanitary policy might be. It was also perfectly apparent that a sound sanitary policy could not be carried out by the state without exercising at certain points that supreme compelling power which is characteristic of political and state action, controlling and regulating in many ways the external acts of members of the society.

But it also became apparent as time went on that a sound sanitary policy which should call on the state for this all-compelling authority to enforce its provisions, must itself be based on sound knowledge, on accurate information, on a definite theory as to the cause of disease and how disease could be combated. In other words, in the last analysis, if the state is to have a sanitary policy it must know what to do. If all disease is an affliction visited on the human race by the gods in their wrath, and the only way to stop it is to appease in some way the heavenly powers, either by prayers and supplications or by the sacrifice of bulls and goats, it is still necessary that the state should in some way or other

have a theory as to how these prayers and supplications can be best offered and as to how the blood of bulls and goats can be best spilled.

As a result of this the state was compelled to rely on the only source of medical knowledge which it had, namely, the medical profession, whatever that might be, consisting in many places and at many times of the priest, at other places of the "medicine man," in all places of the men who were supposed by their peculiar knowledge or training to be able to give to the government this information on which it could safely act.

The supreme importance of the medical profession in a large sense in the history of human society is apparent to anyone who reads even in a cursory manner the records of human experience. That the state was bound to take up some attitude toward this whole field was also evident; and that the activity growing out of this attitude should increase with our increased knowledge of human science was also apparent; and this has been borne out in the history of medical research and medical education in all countries. As the state advanced, then, as it developed a definite policy in regard to public health, using that term in the larger sense, it came face to face in this whole field with what may be called two aspects of this very necessary development. On the one hand its own need of the results of medical education and research in order to carry out its own definite policy in the field of public health so far as it interfered actively and positively in the regulation of the life of the people or in the promotion of its common interest; and in the second place the necessity of providing so far as it could for the promotion of the health of its individual citizens outside of the realm of government interference, so far as it could be secured by the advance of medical knowledge and the training of suitable men to apply this knowledge in the treatment of disease.

These two objects, of course, were not only parallel but they conditioned each other very largely. The state needed, in order to carry out its sanitary policy, well-trained public servants, and these could not be obtained without accurate, careful and suitable training for this purpose. Moreover, it could not be assured that it was improving and advancing its public administration in the department of health unless it was also pressing forward all the time the bounds of our knowledge, the increase of science in this particular department; and consequently *research* was a fundamental need of government activity, even if limited to the narrowest possible bounds, if it was to be an intelligent and fruitful activity.

Thus the state has come by a double road, first through its own need inside the bounds of its own activity, second in its necessary care for the welfare of the individual members of society, first ever to advance and expand our medical knowledge, second to train in an ever more efficient way the men who either in public or private station should apply this medical knowledge.

Some one has said that medicine more nearly resembles theology than any of the other sciences because, I presume, of the large subjective element in both kinds of knowledge. The effect of a drug may be as different on different people at different times and under different

circumstances as any theological doctrine, and the effect of the same theological doctrine on peoples of different ages and different climes has been, of course, extremely different. There is, therefore, in the organization and management of public health a subjective element which must not be lost sight of in our development and training of the men who are to administer this important department of our social life.

The state, of course, in working out a sanitary code, must depend in the last analysis on the advice of its medical men; but the possibility of working out a sanitary code which will be efficient depends also on an accurate adaptation of such code to the real needs, to the fundamental conditions of the society and the time in which it is to apply. The best scientific code in the world would have little or no value if an ignorant or prejudiced or superstitious community should attempt to enforce it. The prejudices of men are especially strong in this field. Consequently the medical men who are going to be good advisers of the government in its sanitary policy and who are going to help raise the standard and hasten or advance the medical knowledge and medical consciousness, so to speak, in the mass of the community, must be men of large vision, of wide outlook, of great experience. They must be statesmen as well as physicians. This means, therefore, that the *physician should be a man of liberal education*, whether that liberal education is acquired in the school or acquired in the practical experience of life. And unless he has this liberal education, unless the profession *as a whole* has this liberal education, we may expect to see the progress of the community in this department of its life very slow and lagging.

So much, then, for the general considerations, for a bird's-eye view, so to speak, of the conditions of medical advance.

The first opportunity I ever had to come in practical contact with a proposed improvement in medical education was during the thirteen years I spent as professor in the University of Pennsylvania. Twenty-five years ago Dr. William Pepper, provost of the University of Pennsylvania, one of the most farsighted, one of the most truly statesmanlike medical men whom I have ever known, appointed a general university committee to take up the subject of the better integration of the professional schools of the university with the college and technical schools.

I happened to be associated with the sub-committee on the medical school. Harking back to my intercourse with Lorenz von Stein and my study of the history of medical education and research in its relation to the government, and examining the state of things then existing in the different modern countries, I recommended to the sub-committee at that time that the university require for admission to its medical school the completion of the sophomore year in the college of liberal arts, and that a medical course of five years, counting from that time, be inaugurated, the first two of which corresponding to the last two of the college course, should be given to the study of the underlying sciences of medicine: chemistry, physics, biology, anatomy and physiology; that the last year should be given practically to the hospital work, and the two intermediate years to clinical instruction.



I was probably led to this conclusion at that time by my conviction that, on the whole, the Germans had worked out the best scheme of medical instruction which had up to that time been elaborated in a large and systematic way for any great civilized country.

This scheme consisted first in a very thorough, vigorous, intellect-developing secondary school course, extending in theory from the ninth to the eighteenth year of age, extending in practice from the ninth to the nineteenth or twentieth. With this preliminary education the student was permitted to begin his medical study. At that time it was possible for him to complete the entire course in a period of four years. That period has since been extended to five years. But even in that day the desirability of a student's spending a year in hospitals immediately on passing the state examination for the practice of medicine was so generally felt that every aspiring youngster took such a year if it were feasible for him to arrange it.

I remember the defence which I made for this recommendation at that time and I should like simply to repeat the two or three fundamental propositions.

I maintained first of all that the future physician should be an educated and cultured gentleman, able to do his part as a thoughtful citizen of a democracy in the support and development of our social and political institutions.

I maintained that the physicians above all other men, not even excepting the clergymen, if of the right type and inspired by the right ideals, might do more to raise social and ethical standards than the members of any other profession. I emphasized the consideration I have already mentioned, that if we were ever to have a reasonable policy in regard to public health, we must rely for expert advice on the physician, and unless he were an educated man, aside from his profession, unless he had a broad outlook and wide vision he would be an unsafe counselor in all these public matters.

I urged again the same consideration from a little different point of view, namely, that the medical profession as such is the keeper, the protector and the promoter of some of the most important and far-reaching interests of society and that the members of such a profession, if it is to do its duty toward the community and the sacred interests dependent on it, must have the education, the training, the culture necessary to perform efficiently this great social duty.

Hence I insisted that the student before he took up the pursuit of medicine in the university should have acquired at least the degree of liberal education involved in completing a course of secondary training extending from the sixth to the nineteenth or twentieth year of age, i. e. from the beginning of school life until, roughly speaking, the close of the sophomore year in the typical American college.

I felt very strongly at that time that if our secondary school were properly organized, that was an ample period for securing that fundamental, underlying liberal education on the basis of which the super-

structure of sound, scientific and practical professional training could be built.

I insisted in the second place that the future physician should be trained in a thoroughly scientific way until he had reached the point when he might properly have an independent, scientific judgment on the subjects in the study of which he was engaged. There was at that time a considerable difference of opinion, and of course it continues up to the present, as to whether this is a correct view or not. Some people distinguish between the scientifically and the practically educated physician. I cannot for my part concede that there is or ought to be any such distinction. It is true that a man may go on studying chemistry and physics and anatomy and physiology till doomsday and at the end of it all not be an efficient practical physician or a safe public counselor. On the other hand I believe that no thoroughly successful practical profession can be built up except on the basis of the fundamental, scientific training of every individual in it. Now, of course, this does not mean that the young man should spend his time merely acquiring information. No man could in the four or five years of a medical course acquire all the medical information we have, and some of it, of course, wouldn't be worth much. We might safely leave it. But in this period, he certainly ought to acquire such a habit of body and of mind, such a control over himself, such a knowledge of fundamental principles that he would be in a position in every subject which underlies the practice of medicine to have his own judgment; be able to apply his own criteria; be able to test, if you will, the judgment of other men by scientific standards.

This is the specific contribution which the German has made not only to medical education but all other university education, that the university training of a man should result in bringing him forward to a time and place where he may properly undertake to test his own observations, his own inferences, his own knowledge, by scientific standards. Out of the whole group of men who have arrived at this point we should then select by some such rough process as goes on in the competitive world outside those men who, having this fundamental scientific training, have also acquired the practical knowledge which makes them efficient practitioners and the larger view and outlook which makes them safe counselors and advisers in matters of public and private health. On the basis of this scientific training—you will note I do not speak of scientific knowledge, for it seems to me the emphasis is to be placed on the training rather than on the knowledge, on the resulting power that the man has over the material that he has to deal with rather than on the amount of specific knowledge that he may have as to what other men have thought or done, where they have succeeded or where they have failed—on the basis, then, of this thorough scientific training should be reared the superstructure of the practical application of this knowledge, to the treatment of human disease. In this department would naturally come, in my opinion, the study of pathology and, of course, all the clinical work; but whether pathology should be put into the first period or the second is a matter for convenience about which expert men, I under-

stand, have a difference of opinion, and I should not undertake to decide such a question myself.

If the university will set before the community, therefore, and insist on this standard of, first of all, a *liberal* education; secondly, a thoroughly *scientific* training; thirdly, a *practical* training, then it will have done all that it can do toward preparing and sustaining a medical profession for this great work in the community and the state.

It goes without the saying, that for giving or conducting such training, some men must be obtained who give their whole time and life and thought to the work of advancing these sciences and training these young men. And while I presume it is true that no man in certain practical departments could be successful unless he is engaged in the practical work also, I think that the medical professor or medical teacher, at any rate in the underlying sciences, should engage in practical work only so far as it will better qualify him for doing the work of investigation and teaching. It goes without the saying that hospitals and clinics and dispensaries are necessary elements of this training. It also goes without the saying that hospitals organized for the purpose of investigation and teaching are undoubtedly for certain purposes far better in this scheme of medical training than hospitals which do not contemplate as a serious part of their work either of these ends.

All this was the result of my study and investigation twenty-five years ago. I have seen no reason to change my views essentially on these points since that time. I have been greatly pleased with every passing year to see some approximation toward this ideal. I believe that in the lifetime of some of you sitting here, our universities will come practically to the standard which I have suggested. In the meantime, however, we are a long way from that point. We have, it is true, made some substantial advance. The university of Chicago in organizing its medical work required for admission to its strictly medical subjects the completion of the first two years in college, allowing, however, the fundamental preparatory subjects for medicine to be taken in these two years, physics, chemistry, biology. The University of Michigan, the University of Wisconsin, the University of Minnesota have followed this example. The University of Indiana has given notice that it proposes to do the same. Northwestern University is on the road to making the same requirements, and a great many of the schools, which from the standpoint of their function as centers of investigation or as centers of training medical practitioners, are less important, have also announced that they intend to follow the same plan. This is a great step forward. I believe that in a comparatively few years it will be accepted by the American public, at least north of Mason and Dixon's line, as the typical American standard.

I am inclined to think that when our elementary and secondary schools are better organized, it will be perfectly possible for a boy to enter school at six years of age, enter the high school at twelve, enter college at sixteen, and graduate from college at twenty, with the preliminary subjects, physics, chemistry, biology, etc., out of the way.



In the meantime the average age of students entering the University is nineteen. By the time he has finished the sophomore year he is twenty-one. I think myself that at the age of twenty or twenty-one the student should be fully equipped to enter on the study of medicine. In fact I should think it would be a mistake, speaking of the average man and the large number, for him to defer to a later period the beginning of his medical studies. Of course there will always be a few men who will spend more time in the college, who will spend more time in the medical school, who will spend more time in graduate work in the hospitals, but I am talking here of the typical man. I am talking here of a standard which we may apply to all men in the long run and which ultimately the state itself may set up as the minimum standard for the practice of medicine. This is the standard to which the American Medical Association is pledged: to which the Association of Medical Colleges is traveling. It is in essence the standard of England, of France, of Germany and other civilized countries.

I see my time is slipping away and I cannot go farther into these details without encroaching on the time of the others. I take it that we are all agreed on these things which I have set forth. We, however, do not make the community. We are not the people who make the laws except within very narrow limits. We are only a part of the people, and we can persuade the people to accept these higher standards only in proportion as they themselves rise to higher standards of intelligence and insight and oversight, and as we ourselves are able to point to actual results which will commend themselves to public conscience and the public intelligence.

The University of Illinois undertook some thirteen years ago an experiment in medical education. It made a contract with the College of Physicians and Surgeons, a proprietary school in the city of Chicago, by which medical education should be carried on under the auspices of the University by the medical faculty which was self-constituting and self-controlling, subject to a veto on the part of the board of trustees of the University, though this veto itself was naturally confined within very narrow limits as a working practice.

The University has never spent a single dollar on the medical school or on medical education. The expenses of the school have been paid entirely from the proceeds of students' fees or the contributions of the professors. The men who control the College of Physicians and Surgeons borrowed money for the purpose of erecting and equipping the necessary buildings and laboratories. This money is to a considerable extent a charge on the property at the present time. But a portion of the original indebtedness has been paid off.

Owing to certain clauses in the contract it was difficult for either the university or the College of Physicians and Surgeons to take a very aggressive attitude in advancing standards; but of course the real difficulty was that neither institution had any money to put into the enterprise. The whole experiment was dependent absolutely on the income from student fees.

With this limitation kept in mind I believe that the university and the College of Physicians and Surgeons may very properly be proud of the results which have been achieved. The real difficulty, it must be repeated, in the way of advancing standards was not good will to do it, but that neither institution had any resources or funds to put into the work beyond that derived from students' fees.

The experience of the last fifteen years has demonstrated beyond a doubt that a modern medical school cannot be established and maintained on any such basis, and the time has come, therefore, in the opinion of the University and of the College of Physicians and Surgeons, when a change was absolutely imperative. With the consent, indeed, one may say, upon the initiation of the College of Physicians and Surgeons, the contract made ten years ago has been absolutely abolished and the medical school has passed as completely into the control of the board of trustees of the University of Illinois as is the school of engineering or the school of agriculture.

The University has leased from the College of Physicians and Surgeons their property on the west side as a plant for the use of its medical school. This lease runs for one year and may be renewed on the same terms for two two-year periods. The University pays the College of Physicians and Surgeons a rental for the use of this property which is based, roughly speaking, on the necessity of meeting the interest charges involved in mortgage and bonds secured by the property, and taxes, insurance, etc., and certain floating and now due indebtedness.

The trustees of the University have the right to purchase the property at an arbitrated value in case the legislature authorizes them to do so, and makes a grant of money for that purpose. In case the University purchases the property the sum paid on the basis of the arbitrated value is to be reduced by the amount of money which the University may have spent on permanent improvements.

The trustees of the University of Illinois have decided to ask the legislature of Illinois for the sum of one hundred thousand dollars per annum for the equipment, maintenance and extension of its school of medicine.

I have been asked by many men what the University proposes to do with this money. He would be a bold man who would say in advance in detail what any board of trustees will do with a legislative appropriation which has not yet been made. No one can know in advance what restrictions the legislature may place on the appropriation.

Moreover I have not been authorized by the board of trustees to speak for them. In fact they have taken no action on this particular proposition. They never did in regard to any other appropriations. In asking for an appropriation for a law school, they did not propose to do anything else than to use their best judgment in promoting the progress of legal education and extending the proper facilities to the young people of this state. In asking for an appropriation for the engineering college they have not sketched out in detail what they proposed to do. That the

law leaves to them, and the legislature has thus far been willing also to leave it to them.

The only thing that one can say is that the trustees, if they get this money, will use it to develop the best medical school they can with these resources. What particular things they will do must be decided by them when the money is at their disposal.

With this distinct understanding, then, that I am not in any sense pledging the trustees of the University of Illinois—a thing which I cannot do—I may indulge in a little prophecy based on a study of the situation, the inherent necessities of the case, and what would probably be done if this money were given to the trustees for this purpose.

I should guess that they would organize a strong force of professional teachers to handle the scientific subjects in the school course such as anatomy, physiology, physiological chemistry, pathology, etc. I should guess that they would bring to the city of Chicago or find them here, a group of men whose cooperation in this work would raise perceptibly the level of scientific work in the field of medicine in the city of Chicago.

I should guess that just as rapidly as they could lead public sentiment they would establish the standard which has been accepted already by Chicago and Michigan and Wisconsin and Minnesota, and if possible advance it somewhat. I should guess that they would get the best advice they could in and out of their own school; in and out of this city; in and out of this country, as to the best things to do in their field and would then do them to the extent of their ability.

Propheying again, without promising either for myself or anybody else to do anything in particular, I should guess that they would pave the way for such a cooperation among the great medical institutions of the city of Chicago in the work of medical research and medical instruction as would help to introduce a new era in this greatly debated department of our sanitary, social and political life.

In a word, I should guess that the outcome of this appropriation would be the beginning of new things in medical education, not only in the University of Illinois but in the city of Chicago, the state of Illinois and indeed the whole Mississippi Valley.

Friends, we are to-day confronting a situation and not a theory. I believe that it is fundamental to any possible organization of medical education in this city or this state, that the state of Illinois as a unit, the great commonwealth, should get behind this great cause. That the state should be supporting medical research and training just as completely and fully as it is supporting agricultural research and training or engineering research and training or legal research and training. I believe that if we all pull together and get the state to take this initial step we shall have made the most important advance in this subject which has been thus far registered. And I am so deeply convinced of this fact that for my part I am willing to sacrifice some other things in which I am greatly interested, or at least to postpone adequate provision for the same, in order to make this great step in advance.



If the commonwealth of Illinois will begin the policy of supporting medical research and medical training through the University of Illinois, I believe we shall have made another great step forward toward the time when the city of Chicago will be a recognized center of medical research, medical training and medical skill second to none in this country or indeed in the world.

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### PHYSICIANS' CLUB OF CHICAGO

A meeting of this club was held Dec. 2, 1910, with Dr. James B. Herrick in the chair.

### MEDICAL EDUCATION IN ILLINOIS

The chairman said: Members of the Physicians' Club: To the casual observer the problems of medical education permit of easy solution. As soon as he himself has obtained his diploma he begins to speak of raising the requirements for entrance. "Let us have," he says, "a thorough course of four years—yes, make it five—in the theoretical branches, and in the practical branches, including actual hospital and clinical work. Let the young graduate be subjected to a rigid state board examination. Let us raise the standard all along the line." This, you will notice, after he himself has obtained his own diploma. The solution, to judge from his glib talk, he regards as easy and simple. To the more critical student, however, of medical education, the problem is not so easy. It is important to note that it touches other problems, problems of liberal education, agricultural and technological education; problems of economics, social problems; the relation which the physician bears to the community and to the state, etc. The question is seen, therefore, to be one that is intimately and intricately connected with other problems.

Some of the details that must be considered may be briefly enumerated. How high a standard shall be required for admission? A high school diploma or two years of college work or a bachelor's degree? Will a high school diploma enable the student to be efficiently prepared to undertake the study of medicine? If a bachelor's degree be required, will not the medical student be robbed of some of the best, the most plastic, the most receptive years of his life? If this should mean that a man cannot be a bread-winner until he is twenty-eight or thirty years of age, is it right to the individual, is it really justice to him? After he has once entered a medical school, what shall he be forced to study? How much emphasis shall be laid upon teaching important facts, that is, knowledge that is already known. How much emphasis is to be laid upon methods? What is the proper place in the medical curriculum for pure investigation or for research? How shall the teaching be done? What is the function of the didactic lecture, the large clinic, the recitation, the small clinic? What about the preceptorial method as applied to medical education? To what extent and how shall undergraduates be encouraged in the way of research, in productive, investigative work—how shall they be prepared to do it? How can they be taught to use the library? What supervision should the state have over undergraduate instruction and over the graduate when he has finished his medical course? As to the teachers themselves, who shall they be? Shall they devote all their time to teaching—the practical man as well as the so-called theoretical man—or shall they have the right, as most now have, to engage to a limited extent in general or special practice? How shall the student obtain the work that he needs in laboratories, laboratories of chemistry, pathology, bacteriology, and so forth? How shall he obtain the laboratory work in medicine and surgery—that is, actual contact with the sick patient? How shall we best utilize the hospitals that are already in existence, which were not founded primarily for purposes of instruc-

tion? How can hospitals that are educational in their inception be obtained; how shall they be organized and managed, and where shall the money for all of this come from? What, after all, is the object of educating a physician? Is it primarily to train him so that he may earn his livelihood, so that he shall be a bread winner, and shall have an occupation or a trade, or is it to train him for a profession? Or is it perhaps, to train him to be an investigator along the lines of pure science?

These are a few of the problems, and there are many others, that confront the one who sits down and carefully and conscientiously studies this question of medical education; and the solution is not easy. To many of these problems you and I have the answer. To many of them our answer is given with definiteness and positively. To others we see two sides.

Now, all these questions, with their ideal aspects must be adapted in their application to practical existing circumstances. If we may believe the report of the Carnegie Foundation, the so-called Flexner report, the existing circumstances here in Illinois are not very creditable. By Illinois we mean with respect to medical education, Chicago, and so the question that is up for discussion is the subject of medical education in Chicago. If Mr. Flexner is right—and I have no hesitation in saying personally I believe that his investigation was impartial and just, and that while we may differ from him here and there, his conclusions are in the main sane and judicial—if, I say, Mr. Flexner is right, we have here in Chicago a most heterogeneous mass of medical schools. Our medical conditions are, I think I am using his words, such that Chicago is a plague-spot in medicine. If we mark the schools, as markings are now made largely, not in medical schools alone, but in colleges and high schools. A. B. C. D. E, and so forth, he finds here only three or four schools that can be called up to the grade of C, "fair," or B, "good." By a little stretch he might possibly mark one or two A minus not "excellent," but "pretty good." The others, some dozen or more, he would mark D, "poor," or E, "failures." How can we better this condition? How can the schools marked B or C be pushed up to the mark A? How can those schools marked D be pushed up at least to C, and how can those of the mark E be blotted out altogether as absolute failures? Is it wise that we should have so many medical schools in Chicago? All these questions are live questions.

We are fortunate in having with us to discuss this question the presidents of two of the leading universities with which these medical schools are more or less intimately associated and the personal representative of the president of the third. The first speaker who is to address you is the president of the University of Illinois, one who ought to know what has been going on in all three of these medical schools because if I remember rightly, he has been on the inside of things in the University of Chicago; he ran or tried to run the Northwestern University at one time (laughter), and he is now running or is trying to run the University of Illinois. He ought to know about the conditions in all three of these medical schools, and so I will call upon President James, truthful James. (Applause.)

#### GENERAL DISCUSSION

DR. ARTHUR DEAN BEVAN: Mr. Chairman, and gentlemen: I shall attempt to say what I have to say in a very brief way as the hour is getting late.

I have been asked to open the discussion on these two papers on the subject of what Illinois needs in medical education, and how Illinois can obtain higher standards of medical education? Before we answer either of these questions let us see what medical education means to-day, not only in Illinois, but in the United States and in the world. Medicine of to-day is a different proposition from what it was twenty years ago, or at the time when I and a great many of you graduated. At that time it was rather a mass of empirical facts, with often very little scientific basis. To-day medicine is a science. It is just as much a science as is chemistry; it is just as much a science as any of the sciences taught in a university, and it has developed into a great mass of useful knowledge.

It demands, to-day, a thorough training in order to convert a student into a competent practitioner, or into a competent medical teacher, or into a competent research man. That training as a minimum means a thorough high school training; in addition a thorough laboratory training in the premedical branches of chemistry, physics and biology; a thorough training in the medical school, in laboratory work, in anatomy and physiology and pharmacology and pathology; a thorough training in the clinical branches of medicine, obstetrics, surgery and all the specialties. It means further not only a thorough training in a medical school, but as an absolute necessity, the training that a man can acquire only as an interne in a hospital for at least one year working in the hospital as a part of the hospital machinery. This practical year should be made an integral and compulsory part of a medical course.

Now, how much of this conception of medicine and these requirements of teaching medicine is accepted by the world? Practically this is the conception in Germany to-day, in Austria and in England, and it is the conception in most of our better schools. Here, in this country, we have 130 medical colleges. A few years ago we had 166. Of these 130 medical colleges, this year thirty-eight already require of their students this preliminary training in the pre-medical sciences, in addition to a four year high school course, and most of the students in these thirty-eight medical schools will obtain, in addition to their four year medical training, a year's experience in a hospital. I should like to see the hospital year made compulsory by every medical school and by every state licensing board. This is a general conception of what medicine is to-day and what a medical education means. Let us turn to the State of Illinois. A clear idea of what Illinois needs in medical education is best presented by showing the present situation in this state. What I am going to read to you is largely taken from the data of the Council on Medical Education of the American Medical Association, compiled by our Secretary, Dr. Colwell and myself. It is practically official. All the medical schools in Illinois are located in Chicago, and this state has more medical schools than any other state or country in the world. There are now sixteen institutions in Chicago which turn out graduates who bear the title of doctor. Of these sixteen colleges, there are five which turn out doctors who legally, at least, are admitted to practice medicine in but a limited way:

1. The Littlejohn (Osteopathic) College.
2. The American College of Mechano-Therapy.
3. The McCormick Neurological College.
4. The Oakley-Smith College of Nahprapathy.
5. National School of Chiropractic and Physiological Adjustment.

They are permitted to diagnose, if they can, and to treat any cases which come to them, but they are not supposed to do surgery or to prescribe or administer drugs. Furthermore, they are not entitled to call or advertise themselves as physicians or doctors.

There still remain eleven schools which turn out doctors of medicine, who on passing their state license examinations are permitted to practice medicine in any or all of its branches. Of these eleven medical schools only six were included among the colleges in Class A and B by the Council on Medical Education which for nearly six years has been conducting an extensive study of medical education in the United States. Only three of these were accepted by the Carnegie Foundation report. There are, therefore, on this lenient marking five medical schools in Chicago which the Council on Medical Education were compelled to place in Class C, which means that these colleges were so poor that it would require a complete reorganization to make them acceptable. The report of the Council on Medical Education published in the *Jour. A. M. A.* shows that these colleges are: The National Medical University, which is at present not recognized by the Illinois State Board, Jenner Medical College, College of Medicine and Surgery (Physio-Medical), and Hering Medical College. In the list of class A and B colleges we have the following: Rush Medical College (University of Chicago), Northwestern University Medical School, Hahnemann Medical College, and the



College of Physicians and Surgeons (University of Illinois), and Valparaiso University, and Loyola University Medical Schools. These colleges in both the A and B lists of the official report of the Council on Medical Education of the American Medical Association might properly be recognized by the state board. The five medical schools which are not acceptable are deficient in most or all of the following: their preliminary requirements do not meet the standard of the medical practice act; their medical course is not strictly graded; the number of expert teachers is too limited or entirely wanting; adequate laboratory facilities are lacking or not used; important laboratory branches are not taught; dispensary and hospital clinical facilities are seriously deficient, absent or not used, or the school is to a large extent a commercial enterprise conducted for what profit or prestige there may be in it for its professors, or is kept alive by the employment of misleading advertisements or by methods inconsistent with the maintenance of fair educational standards.

In a number of other states in this country reasonably high standards of medical education have been adopted, the standards are strictly adhered to, and a number of the low-grade worthless colleges have been closed. In many other states there has been a marked progress in obtaining better educational standards and better methods of regulating medical licensure. What Illinois needs in medical education are fewer and better medical colleges; a more strict enforcement of the present requirements; *i. e.*, a four-year high school education as a minimum standard for admission to medical colleges, and later, a year of college work should be added to the preliminary requirements, including physics, chemistry and biology. As an additional safeguard, a thorough and practical examination should be required of every candidate for license. With these changes, the other problems concerning laboratory, dispensary and hospital facilities, would more rapidly approach solution. Illinois should not lag behind, but should be a leader in upholding right standards of medical education.

Now, Mr. Chairman, all this is not so much an indictment of the state board, which is shown by existing conditions to be inefficient, as it is an indictment against the entire educational system of our state which makes such conditions possible; an indictment of the medical profession of the state and of the people of the state for permitting the continuance of such conditions. The solution of this problem is simple. The great universities of the State must assume the full responsibility of the medical schools, and provide the necessary endowment, the necessary plant and the men to carry on medical investigation and medical education along the best lines; secondly, we must have a state board which will protect the citizens of the state against the ignorant and the charlatan by demanding thorough training of our medical practitioners and by wiping out the diploma mills. We need a university medical education to provide educated medical men for the State of Illinois, and we should demand the protection by an efficient state board against the worthless commercial medical college and the diploma mills. Gentlemen, this can be done by cooperation; this can be done by the cooperation of the great universities of the state, with the medical profession of this state, and with the people of the state educated by the public press to the necessities of the situation.

MR. ARTHUR HERBERT WILDE (Northwestern University, representing President Harris): Northwestern University takes pride in its medical school. It was the first to establish a three-year systematic course of instruction; it was the first to establish a four-year course, and it did this at great sacrifices. We all stand for higher medical education, and you all know just as well as I do that this involves several things. First, it involves better prepared students. Northwestern University will require in the Fall of the coming year (1911) a two-year college course as a preparation for the medical course. Furthermore, if Dr. Harris had been here to-night he would have laid emphasis on this—that this college preparation should be a real liberal arts education, and not simply elementary courses in chemistry and biology, to be followed by advanced courses in chemistry and biology in the second year, but this preparation should include

modern languages, mathematics, history, English, and other liberal studies. These two years of college work will better prepare the student for his life work. Some of our best physicians have not pursued such a preparatory course, but only a high school course. I might say parenthetically that Dean Wigmore of our Law School made an interesting study a short time ago to find out what were really the superior advantages to be found in the progress of those lawyers who had had a full college course, before they took up the study of law, as compared with those lawyers who had not received a college course preliminary to taking up the study of law, and the advantages were not so great on the side of the college man as had been assumed. Nevertheless, I think you will agree with me that the greater and fuller the preparation, the better the men are likely to be.

Besides the well-prepared student, we must have well-prepared teachers. We must have medical teachers, medical research men of better theoretical preparation for giving instruction in our medical schools than most of the teachers have been able to acquire. We want more of the German patience and spirit of investigation. We must have complete laboratory facilities such as few schools possess at the present time. We must have enthusiasm for the work. I believe we shall never prepare students and teachers and good laboratory men without a real enthusiasm for higher medical education. Every school, it seems to me, ought to have in the coming days such laboratory equipment as the University of Chicago provides for Rush Medical College. It ought to have such endowment as Northwestern University has just received from Mr. Patten, who has given two hundred thousand dollars for the purpose of advancing medical research, a gift which marks an epoch in the history of our medical school. And every medical school should have also such enthusiasm as has been infused into the medical school of the University of Illinois by the present head of the State University, Dr. James. (Applause.) These must be the possessions of every medical school of eminence hereafter. Not all of these things, perhaps not one of them, will be secured without sacrifices. It cost Northwestern University in cold cash when it required only one year of college education as preliminary to the study of medicine, twenty-five thousand dollars a year. When we come to the basis of a second year in college, it is going to cost much more, and we do not know how much. Every one of the schools must have endowments. We have passed the time when the fees of students will pay for the cost of education. The state must supply it or well-intentioned men must make gifts for medical education. The colleges of liberal arts have demanded most sacrifices from the public; in the future medical colleges should call also for large sacrifices on the part of the public. Medical schools are going to furnish a more expensive education, and this expense must be provided for by resources outside of the fees of students. The medical school of Northwestern University, like the law school and the school of pharmacy, will be a cost to the university, and no longer an income to the university.

You may be interested in the attitude taken by Northwestern University regarding the proposition made by the state university. President Harris laid before the Board of Trustees within the last ten days a proposition which President James outlined in a letter before that time, and the trustees practically unanimously took this stand,—that the citizens of the state could not do less than support any proposition that came from the state university or from any other substantial source, which looked toward higher education of the people, whether in medicine, law, or anything else; that as good citizens they must support any such movement.

Northwestern University and other institutions have disabused themselves of the notion that the remarkable progress the state university has made in the last five years is going to kill off the other universities. Not so. The belief is that hearty cooperation and association of these institutions will be of advantage to all. All will profit by the strength of any one of them. To the request to be made by the state university of the legislature for an appropriation of one hundred thousand dollars, Northwestern would say that it is too small. If the state

university takes up medical education in a thorough-going manner, it ought to ask for a much larger gift. "One hundred thousand dollars is a modest beginning," President James says. But these are too modest beginnings for such a work as this. The state University should ask for more, and Northwestern will support a larger request more loyally and more insistently than it will a smaller request. Northwestern University will look with great interest on any progress the state university may make in the extension of medical education.

To express an opinion of my own—and I am not speaking *ex cathedra*—the state university in its work of expansion in medical education might include two things: it might provide lecturers to go from place to place and give courses in preventive medicine, or in first aid to the injured, or in preliminary care that should be known in every household before the doctor comes. The public should be better informed on matters of fundamental hygiene and sanitation. Public sanitation and domestic sanitation should be taught the people as freely as they are taught agriculture. The City of Chicago should have an institution like the Pasteur Institute or the Rockefeller Institute of research, something as great as either. The resources for the establishment of such an institution in this state are as great as can be found anywhere in the world. (Applause.) The faculties and trustees of Northwestern University would welcome and appreciate as much as any one a college or institute of medical research and would cheerfully recognize that no one is better qualified to direct it than the president of the state university. We have no jealousy in such a matter, but simply a hearty interest with you in the progress of medical study and medical research, for we are here for the common purpose of enlightenment of the state, and we want to serve our day and generation in our way just as faithfully as we hope the other institutions will serve it in their way. (Applause.)

DR. HARRY PRATT JUDSON, President of the University of Chicago: I have been greatly interested in these papers and discussions. I have been impressed by the fact pointed out several times to-night that this question of medical education has no earthly relation to anybody who is present. You have all received your education, and if your medical school was a good one it benefited you. If it was a bad one, then your innate genius carried you through, and you have made of yourselves good physicians. The question we are discussing this evening, then, bears on what is coming. We must keep in mind in the training of young men for medicine for the future days, that we have made a tremendous advance in science in the last few decades—that never in the history of the world has science been moving so rapidly as in these days in which we are living—so that a young man who is to be a physician in the days to come must have a sound training in this rapidly advancing and broadening and deepening science of medicine. It is no longer a mass of empirical facts, as has been said by Dr. Bevan, but a new scientific medicine that has been wrought out in place of the superstitions on which some of us were brought up. Any one, therefore, who keeps in touch with scientific thought will see the necessity of a high medical education. Out of the medical training which will make the physician of to-morrow I fancy there will come three things. First, there will be a considerable number of young men who are to become simple, plain, straightforward, ordinary practitioners. They will not be men of genius. They will pick up a living in some way, and most of their patients while they are practicing on them will probably get well. But there is a large field for the plain, ordinary, family doctor. In the second place, there will be a smaller number who will be extremely expert practitioners, men of genius, and they will be much more than medical practitioners. They will be some of the foremost men in all our communities. In these days, when a physician can be chief of staff of the United States Army, our doctors can do almost anything if they only have brains enough, as I know many of them have. We know very well that a highly trained expert medical man is much more than a mere practitioner. He is one of the leading factors of the age in directing the currents of social life. He knows what is going on and how to lend a hand in the right place in the development of our modern progressive society, and there will



be, therefore, from the highly trained physicians of the future those who will be leaders of social development. There will be, I fancy, a still smaller number of men whose genius lies along the lines of scientific medical research. Of course, physicians in general will do more or less of that, but there will be some few who are so trained and who are so expert and whose enthusiasm is so great, that they will devote themselves, heart and soul, to this one fascinating, fruitful line of medical development. We need such men. They are heroes. Dr. Ricketts gave up his life in the pursuit of research work, and when such men devote their lives to a noble cause, in the years to come the advance of medical science will lie largely in their hands. These things will come from any kind of medical training. Now, I do not believe that in all the conditions of our modern life and modern education the amount of training to be given young men in these lines can be adequate with less than two years as a foundation, and that I believe to be the minimum to-day in the minds of the best men who are connected with our medical schools, and I say minimum with emphasis. President James told us what they are aiming at, and what he twenty-five years ago saw. It is coming to-day, and the time at which to begin to put this requirement into effect, I should say, is the second day of December, 1910. (Applause.) The only reason why it should not be is simply because you can get more students without it. But they are not worth while. It is more important that medical schools should have a small number of properly prepared students than a large number of ill-trained students. The men who take more time in preparation will, in twenty years to come, be the men of standing in the community. Therefore, I believe that Chicago is to be, I hope early, a great center of advanced medical education in this country.

REV. H. S. SPALDING (Loyola University): I have listened to the papers and to the discussions with much interest. I am glad we have been given recognition as the fourth medical college in the list mentioned. I listened with respect and interest to the President of our state university, Dr. James, and what he said with reference to high ideals. I can endorse. Our new university of Loyola is not an isolated institution. If it were, it could not cope with the older and better equipped institutions in the state; but it is part of an educational system that conducts thirty-two colleges in this country, with about fifteen thousand students, and throughout the world with seventy-five thousand students; this system of Jesuit education has been tested for three hundred years, and I think that Loyola as a part of it has elements of endurance.

With regard to raising the standard of education, we certainly believe in it. We certainly agree that when it comes to higher ideals we look upon Germany as the great country that fits in perfectly with our system of education, and any standard that reaches towards that will meet with our approval.

There has been reference made to Dr. Egan and his work. I am not in politics, but I believe Dr. Egan has done his duty and he has not cringed before anybody, big school or small, and if you, gentlemen, want the standard raised, raise it by law to two years, and Dr. Egan will enforce it. But if you have got only a high school standard by law, you cannot expect him to go further. I believe that he has been honest with the smaller schools. He has never done anything but justice. He has been honest to us and honest to you all.

Now, gentlemen, I claim we have as high ideals as the three larger medical schools in this state, and I want to say to you solemnly, that if you are going to raise the standard of education in Chicago, you must do it by cooperation. We are willing to cooperate with you. We are willing to meet the standard, but you must not think we are going to sit idly by and let Mr. Flexner, or Mr. Carnegie, or anybody else crush us out of business for the sake of the three schools that may surpass us in numbers. I want to say for Loyola University, that we have as high ideals as any of you, and we are willing to work with you and for you; but we ask you to work with us in conducting the schools, and in the enforcement of preliminary standards or degrees. We will stand by you, work with you, and all we ask is that you work with us and do not work against us.

MR. W. TUDOR APMADOC (Member of the Legislature of Illinois): I feel that this demand for a higher education is serious and ennobling. President James has succeeded in getting more money out of the legislature than any man who came to Springfield, and for a good and worthy purpose. The King of the Corn Market (Mr. Patten) gave two hundred thousand dollars to the Northwestern University for higher medical education, and I propose that the State of Illinois, which yields a larger corn crop than any other state, should at least give that much for this worthy purpose. (Applause.)

MR. WALTER CLYDE JONES (State Senator): I have been much interested in listening to the discussion this evening. I know very little about medicine, but I am in favor of improving the conditions in all professions. This same battle for higher education has been waged in the legal profession with which I am connected, and some substantial strides have been made in that direction. I should say, however, that publicity with respect to your proposed reforms should not be confined to the physicians. You may have addresses delivered here, and they may meet with your approval, as they have this evening, but if you stop there you will fail in your object.

The first speaker, who preceded me, has stated that lobbyists are a very important part of legislation. In my brief experience in the Legislature I have been surprised to find how important it is that the advocates of legislation and the opponents of legislation should appear personally in Springfield. Every week the trains from Chicago are filled not only with members of the Legislature, but with men from Chicago representing various movements and institutions, who are for or against legislation that is pending in Springfield. I might cite an instance which would come close to the gentlemen gathered at this banquet board. There was a bill presented at the last session relating to the osteopaths, and the osteopathic associations sent down an effective lobby, and they were able to pass this bill through one of the Houses of the Legislature. The members of this association and its allied associations were perhaps asleep, but they were awakened to the necessity of action, and they sent their lobbyists down and were able to prevent the ultimate passage of that bill. I simply cite that instance to make this point, that if this body, and the other medical associations affiliated with you, are in favor of any definite program in the way of legislation which you wish passed through the Legislature, it is important, not only that your own membership, but that you individually, should take steps to educate public opinion so that the people will support you. You should send men down to the Legislature to appear before the committees of that body to educate them as to your views, because there are some fifteen hundred or two thousand bills presented to the Legislature at each session, and it is impossible for any member of the Legislature to grasp the features of these bills unless the men who are specialists in the particular subject-matter appear before the committees.

Dr. James has been referred to. He comes over to Springfield every session with his professors and his committees, and they present their requests, and they back up their requests with figures and with facts, and they get substantially what they are entitled to. We are always regretful that we are unable to give the University of Chicago all that it asks; that we are unable to give the State Charitable Institutions, of which Dr. Billings has been the head, all they have asked; but you must understand that we are limited in the amount of appropriations which we can make. At the last session the requests for appropriations were something like thirty-two millions of dollars, while we had only about sixteen millions of dollars to appropriate, so you can see there had to be substantial cuts all along the line.

A few years ago a request was made of the Legislature to appropriate some three hundred thousand dollars to the State University to take over the buildings of The Physicians' and Surgeons' Medical College in Chicago. Many were convinced, in view of the arguments presented, that this should be done, if it were possible to do so, but it was found impractical to appropriate three hundred thousand dollars for that purpose without taking money that was necessary for caring

for the insane and other dependents of the state, and for the running expenses of the university and other educational institutions. You must realize, therefore, that members of the Legislature have a difficult problem presented to them, and they appropriate money oftentimes for those institutions which are most insistent—which make the strongest and the most logical appeals—so that my parting word to you would be that if you at heart believe in this movement which you are discussing to-night, you should at the proper time appoint committees—the ablest and most efficient of your membership—to take the train to Springfield, to sacrifice something of their professional work, and go down to Springfield and appear before these committees and enlighten them in regard to the ideas which you believe should be enacted into law. I believe you will find receptive members of the Legislature there who will heed your suggestions if they be based upon fact and justice.

DR. GEO. W. WEBSTER: I want to refer only to one point in regard to the establishment and maintenance of higher standards of medical education in the State of Illinois, and particularly higher entrance requirements, and I wish to say that the stumbling-block that has been placed in the way of the State Board of Health to prevent the establishment of such standards is placed there by the medical profession of this state through its legislative committees of the state medical societies. By that I mean this: I few years ago I proposed—and I think I was one of the early ones to propose—that the entrance requirements should be two years of college work in addition to the high school course. I proposed this standard in a paper read before the National Confederation of State Medical Examining and Licensing Boards, and it was adopted. I had a conference at the same time with the Council on Education of the American Medical Association in Boston, and told them what the National Confederation propose to do. It was generally understood, and it was, I believe, the policy of the State Board of Health, that this two-year requirement was to be demanded as soon as the conditions would warrant it. In order to prevent the State Board of Health from establishing any such standard, the Legislature of the State of Illinois, at the instance of the legislative committees of the state medical societies at the meeting of the General Assembly, in 1907, took out of the hands of the State Board of Health the power and authority to establish entrance requirements to medical schools. That power is no longer in the hands of the State Board of Health, and the State Board of Health does not establish the standards of entrance requirements to medical schools. That standard was established by the people of the State of Illinois through their chosen representatives in the meeting of the Legislature in 1907, and was made a high school certificate. The State Board of Health has no authority or power to raise that standard in any way whatsoever. Now, if you want to raise the standard to two years work in college as an entrance requirement, something in which I heartily believe, then the first step in doing it is to repeal that part of the medical practice act which makes a high school diploma or a high school certificate the highest entrance requirement, and either leave it in the hands of the State Board of Health to make the standard what it should be, two years of college work, or else through your chosen representatives in the Legislature make the standard such a standard as you demand. But it cannot be done by the State Board of Health under the present law. We have no authority to do so, and if you want a legal standard it must be done in that way. I merely make this statement in explanation, as it does not seem to be generally understood here to-night that this standard cannot be required or adopted or enforced by the State Board of Health without a change in the present law.

DR. JAMES A. EGAN: The State Board of Health has been condemned to-night for conditions said to exist in certain medical colleges in Chicago, but nothing has been said as to the law under which the State Board of Health operates, or the powers and limitations of the Board under this law, except, briefly, in the remarks made by Dr. Webster. These powers and limitations might be considered



with profit by all present. I am not allowed time to fully discuss the law and its mode of administration.

Just a few words bearing on the favorable references to the Carnegie Foundation's report, made here to-night, and to the report of the Council on Medical Education. As will be seen, these reports differ. Mr. Flexner who inspected thirty-four colleges in six different states, Colorado, Illinois, Iowa, Missouri, Nebraska and Utah, during the month of April, 1909, condemned, to a certain extent, every medical college in Illinois, excepting one, which he criticized. He, however, pronounced as acceptable to the Foundation three different schools, unreservedly condemned the remaining nine, and pronounced Illinois a "plague spot" for the reason that these nine "exist and prepare candidates for the Illinois examinations in unmistakable contravention of the law and state rules." But of the schools so unreservedly condemned by Mr. Flexner, four are pronounced acceptable to the Council on Medical Education in the report read to-night. Query: Who is right, Mr. Flexner or the Council?

As an exception seems to be taken to my remarks concerning Mr. Flexner, permit me to read from his report which lies on the table before me. Mr. Flexner unsparingly condemns medical colleges in nearly every state in the Union. He states that scarcely more than thirty of the 155 medical schools of the United States enforce a definite entrance requirement. His strictures on the teaching facilities are no less severe. According to his report, only some thirty of the 155 schools are now fairly equipped with the necessary laboratories, and fewer than thirty enjoy acceptable hospital facilities. Finally Mr. Flexner remarks that only about a dozen of the 155 medical schools have the clinical facilities that they need. So it would appear that the conditions reported by Mr. Flexner as existing in Illinois are more than duplicated in other states.

There is much that I would like to say to you regarding the State Board of Health's administration of the law, but, as my time is limited, I will close and thank you for your attention.

DR. JOSEPH ZEISLER: The remarks of Dr. Egan prompt me to say a single word in regard to the Flexner investigation. I believe there are a great many who will side with me when I say the Flexner report was in many ways one of the most important, one of the most helpful things, that could have happened to the progress of medical education in Illinois and elsewhere. Flexner may have been a little bitter or severe in some instances; but was the report really unjust, when we compare the status of medical education in some of the best schools in this country with that elsewhere, as, for instance, in Berlin, Vienna, Bonn, etc.? Do we not occupy a much inferior position, taking the average medical school in this country, as compared with European schools? I do not wish to enlarge on this thought, except to say that I believe this report, even if it was somewhat harsh to the school with which I am connected, was a good thing. Let me cite one single instance of medical education in Chicago.

I have had occasion for four years to watch the medical career of a person who went through a college in Chicago which has the right to turn out doctors. It was an evening school. That person could not write English grammatically, and though a German, not that much better. Being therefore rather illiterate that person was accepted by that college, passed through school by paying ten dollars every month, received the degree of "Doctor of Medicine," and came up for the State Board examination. Gentlemen, it is up to the State Board now in the examination of that person, whom I know to be quite unfit for the medical profession, to exercise that check which is absolutely necessary for the protection of the people of the State of Illinois. I ask you, gentlemen, does the State Board of Health of Illinois exercise such a check? Is it not possible for such people, as I described, to slip through on a written examination, which means very little indeed, and be let loose upon the populace?

## COUNTY AND DISTRICT SOCIETIES.

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### ALEXANDER COUNTY.

The Alexander County Medical Society held its annual meeting at the Commercial Club rooms, in Cairo, Dec. 15, 1910. There was a large number of the physicians of the county present, and the affairs of the society appear to be in a prosperous condition. One new member and one new application for membership were received. The following officers were elected for the ensuing year: President, S. B. Cary, Cairo; vice-president, Samuel Dodds, Cairo; secretary-treasurer, James W. Dunn; delegate, W. F. Grinstead; alternate, Dr. W. C. Clarke; member board of censors, Dr. H. S. Davis. Drs. J. B. Hibbitts, B. S. Dickerson, Wm. H. Fields and A. A. Bondurant presented interesting clinical cases which were freely discussed by the different members of the society, after which the society adjourned.

JAMES W. DUNN, M.D., Secretary.

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### BUREAU COUNTY.

The Thirty-Fourth meeting of the Bureau County Medical Society was held at the City Hall, Princeton, Thursday, December 1, with Dr. Horner of Tiskilwa in the chair. The following members were present: Drs. C. C. Barrett, M. H. Blackburn, M. J. Coveny, S. W. Hopkins, C. Horner, B. F. Landis, F. Lewis, A. H. Malm, A. E. Owens, H. M. Owens, F. C. Robinson, J. J. Moran, C. C. Scott, H. D. Steele, L. M. Wiman and O. J. Flint. The following visitors were present: Drs. J. F. Miller, William Hessert, V. D. Lespinasse from Chicago, Hoffmann, Hafler, Hall, Oliver, Melick, Bushee, Wickersham, Downer, Hayden L. Fischer, also Rev. Barrett, Mrs. Cox, H. M. McKee, Mrs. Hessert, Mrs. Barrett, Mrs. Carlson, Mrs. Gibbs, Mr. Immke, Mr. Hodgman Sr., and John O'Donnel. The minutes of the preceding meeting were dispensed with owing to the lack of time. The officers elected are as follows: President, W. C. Griswold; first vice-president, F. Lewis; second vice president, C. C. Barrett; secretary and treasurer, O. J. Flint. The meeting was adjourned until 1 o'clock and was called at that hour.

Dr. Miller then read a paper on "Poliomyelitis" and he said in part that the first recorded epidemic was in Louisiana in 1841. The second in Sweden in 1881. The total number of cases reported up to 1905 was less than 1,000. From 1905 to 1910, twenty-five epidemics occurred with 8,054 cases. These do not include the isolated ones. It is distinctly a summer disease, which, unlike most contagious diseases, has been more prevalent in the smaller towns. There has rarely been more than one case in a family. There is little doubt that the virus can be carried by a healthy person to a third party and some evidence that the disease may be contagious even several years after the patient has suffered from it.

The disease is evidently microbic in origin although the germ has not been isolated, perhaps because it is too small to be seen even with a microscope. The nasal secretions contain the virus and may be the entrance way for the virus to a large extent. It resists freezing for 40 days or drying for 15 days. But a temperature of 130° F. for one-half hour destroys the virus promptly, also either hydrogen peroxid or carbolic acid has the same effect. The most common symptoms are sore throat, which may be slight, fever from 100 to 104, intestinal disturbances, either constipation or diarrhea, sweating often profuse, generalized pain and tenderness with general rigidity and paralysis, hyperalgesia of the skin and usually a decrease of white corpuscles, although this is not constant.

Poliomyelitis should be diagnosed from trichinosis and meningitis. There is a history in trichinosis of eating raw meat, often vomiting, then severe intestinal

disturbances and then the lapse of 8 to 10 days before the appearance of muscular soreness and rigidity. This latter is an important diagnostic point. Edema of the face and eyes is often present and the blood shows eosinophilia. In differentiating poliomyelitis from meningitis the absence of mental symptoms (as delirium), lessening of leukocytes, soreness and rigidity confined to two or more limbs or more often to one leg or foot, speak for anterior poliomyelitis. When in doubt resort to lumbar puncture as by this means meningitis, if present, may be determined and a serum used, which if injected early, is curative. For this reason an early diagnosis is important. As yet no specific treatment has been discovered so the disease can only be treated symptomatically, but most important is the prophylaxis. All cases should be quarantined for at least six weeks.

Dr. Wm. Hessert talked on "Treatment of Fractures," making his paper additionally interesting by the use of stereopticon views.

Dr. V. D. Lespinasse spoke on "Blood-Vessel Anastomosis," which was given in the following divisions: Older attempts at blood-vessel unions; Lespinasse magnesium ring (its points of superiority); conditions suitable for operation; transfusion for acute anemia and shock; senile or arterio-sclerotic gangrene; repair of all wounds of blood-vessels; transplantation of legs, arms, and kidneys; cure of ascites due to cirrhosis of the liver; removal of emboli from this point of lodgment; and cure of hemorrhage of the new born. Dr. Lespinasse's paper was instructive as well as very interesting.

Dr. A. E. Owens closed the program with his paper on "Vaccine Therapy." He related some of his experiences along this line of treatment from which he believes some good results have been obtained.

## COOK COUNTY

### CHICAGO MEDICAL SOCIETY

*Regular Meeting, Nov. 2, 1910*

A regular meeting was held Nov. 2, 1910, with the president, Dr. Alexander Hugh Ferguson, in the chair. Dr. D. A. K. Steele read a paper entitled "The Matas Operation for Popliteal Aneurism." The paper was discussed by Drs. Charles Davison, Charles E. Humiston, A. J. Ochsner, Carl Beck, Alexander Hugh Ferguson, and in closing by the author of the paper. Drs. V. D. Lespinasse, G. Carl Fisher and Joseph Eisenstaedt, contributed a joint paper entitled "Blood-vessel Anastomosis with Magnesium Rings: Demonstration of Specimens and Operation on Dog." This paper was discussed by Dr. Allen B. Kanavel. Dr. George E. Shambaugh contributed a paper entitled "The Development of the Theory of Hearing." The paper was discussed by Dr. J. Holinger, and in closing by the author of the paper. Adjourned.

#### DISCUSSION ON THE PAPER OF DR. STEELE

DR. CHARLES DAVISON: I saw Dr. Steele perform both of these operations on popliteal aneurysm, and watched their convalescence during the entire time and I was much taken with the kindly manner of the convalescence. There was pulsation in the distal arteries after the operation, showing either that there was anastomosis naturally sufficient to carry on the circulation or that there had been dilatation of the arteries forming the anastomosis. As I understand the Matas operation, under ideal conditions, the expectation is to make a patulous opening through the aneurysm after intracapsular suture in such a manner that the current of blood will be carried on uninterruptedly through the sutured aneurysmal sac, carried on permanently so as to furnish blood to the distal extremity. A sacculated aneurysm, as I understand it, is the ideal form. The intracapsular pursestring is passed down at this point (illustrating on black-board), cutting off the artery from the sacculated condition. When the sac is closed off by intracapsular sutures the artery is left patulous for the current of blood to pass in a normal direction. Any operation, which has for its idea



the repair of an injured or diseased organ and the restoration of its function, not destroying the organ or diverting its function into some other organ to do double work, is a successful achievement in surgery, and whether the blood is carried permanently through the patched artery, or carried temporarily through the patched artery, in either case the circulation is carried on without interruption until the anastomotic arteries are sufficient to handle all the blood supply. In fusiform aneurysm, where there is dilatation of the walls of the artery in every direction, the Matas operation is entirely different. It is the obliterative form, and you put an intracapsular pursestring around both openings of the artery, and then close the whole thing tightly by intracapsular suture in the same manner as Dr. Steele did. Even then, it is a great advance over the older operations, over the Hunterian form of ligation or the complete dissection of the aneurysmal sac and ligation of the efferent and afferent arteries. To my mind it is a distinct advance because it does not disturb the tissues to the extent that infection may occur, as in the Hunterian ligation or complete dissection of the sac. The suturing is entirely inside the aneurysm. It does not disturb the structure outside at all. It does not interfere a particle with the anastomotic circulation which surrounds it. It does not produce any great amount of traumatism and subsequent inflammation, but the greatest point is the fact that the satellite vein is not interfered with at all. The veins may come along closely to the sac or be incorporated within it, and by this operation are not interfered with at all, and obstruction of the veins which oftentimes makes trouble is done away with. There is far less danger of gangrene of the extremity by the Matas operation, even in the obliterative form of the operation, than by any operation we have previously had.

DR. CHARLES E. HUMISTON: I have had experience with two cases of aneurysm treated by the Matas method, as described by Dr. Steele, and as both of them were successful I am glad to speak of them to-night. One has been reported and is incorporated in Dr. Matas' report which he made at the meeting of the American Medical Association in Chicago in 1908. At that time there were fewer than one hundred cases reported, only two reported from Illinois, one an atypical case by Dr. Beck, and my own. More than that number, however, had been operated on, and some of them had not turned out successfully. The larger one, the first one I attempted, and which proved to be successful in its result, was as large as a good sized coconut. The last one I operated on at the Cook County Hospital in August, 1910, the details of which I have not complete, as I did not expect to report it this evening, but I intend to do so later. In this case the aneurysm was the size of a baseball, popliteal, in a colored man, forty-three years of age, with a syphilitic history, the patient having been infected twenty years ago. This was undoubtedly a spontaneous aneurysm as there was no history of trauma recently or at any time. It was a sacculated aneurysm, the artery having ruptured, but there had been present a fusiform aneurysmal dilatation of the popliteal artery, to begin with. The technic as described by Dr. Steele was followed with a few minor and unimportant modifications. Instead of wiping the sac with gauze to irritate it, I painted it lightly with tincture of iodine, and the result was satisfactory. The operation as proposed by Matas himself has to do with obliteration of the artery and destruction of the sac, and he calls it obliterative endoaneurysmorrhaphy. The restoration of the lumen of the vessel is something, of course, to be desired, and he describes it later and refers to it as being desirable, but it is not the one thing that he desired his operation to be known for. The Matas operation means the internal suturing of the orifices of all vessels which enter or leave the aneurysmal sac, and the obliteration of the sac without doing injury to the surrounding nerves and other tissues. I believe that most failures come from attempting to restore an artery whose walls have already ruptured spontaneously and have given way. I recall one case at Cook County Hospital operated on for a small aneurysm just above the elbow, and with an attempt to reconstruct the artery. It ended fatally some time afterwards from secondary hemorrhage. The pulsation which takes

place in the sac following Hunterian ligation shows that the collateral circulation is already present, and in most aneurysms that have existed for six weeks or longer the collateral circulation has already been established to a great extent; and it will be found, especially in the popliteal region, that the foot will remain warm even though no pulsation is palpable in the arteries below the aneurysm. Destruction of the sac aimed at from the beginning and from its inner side without disturbing the surrounding structures will yield the best results in almost every case.

DR. A. J. OCHSNER: While in New Orleans some years ago I had an opportunity to examine the first case which Matas had operated on by the method which Dr. Steele has described to us and I have consequently followed this subject with especial attention and interest from the time of its introduction.

I believe that if one is cautious not to unduly traumatize the surrounding tissues, the results will be as perfect as they have been in these cases, provided the aneurysm is not too recent. I recall two cases, one of the femoral, the other of the popliteal artery in which I have performed the operation.

We have been very much pleased with the simplicity and the practicability of the operation. It reduces the operation to one of very much less gravity and very much less difficulty, provided one carries out simply the plan that has been explained to-night and heeds the precautions emphasized by Dr. Davidson.

DR. CARL BECK: I would like to speak of one or two points in connection with Dr. Steele's paper. The first is the very interesting fact that he has had one case with two aneurysms in one patient, which shows that the pathologic condition causing the aneurysm is to be considered in such cases of aneurysm. Of course, those of us who have had to deal with aneurysm have had to deal in most cases with traumatic aneurysms. These are entirely different in their treatment than the aneurysma dissecans, as it has been called, a pathologic condition of the vessel wall where a small opening is made by the impulse or impact of the circulation, and then the blood separates the layers of the vessel wall and fills them with blood so that an aneurysm is formed which looks fusiform, but which is really a sacculated aneurysm. In such a case the operation of Matas is very difficult, and as the wall of such an aneurysm is friable, these are the cases in which the results have not been as favorable as in the others. In traumatic aneurysm the Matas operation is an ideal method, in otherwise healthy individuals. While Dr. Steele has been very successful in the introduction of the wire, other surgeons have not been so successful in their results. I have used that method also but have had a fatality. A second point is this: Sometimes it is impossible to use that method or any kind of operative method. I have reported one case that has been treated in a way that seems to me very simple. The aneurysm, which was situated in the popliteal region, has been treated by the method of high frequency currents which gradually developed a total obliteration of the aneurysmal sac. I have not read much of experiments of that kind by others, but up to date there has been no recurrence of the symptoms, nor has the aneurysm appeared, so that I should recommend to try it.

DR. ALEXANDER HUGH FERGUSON: I would like to ask Dr. Steele if he used flexion at the knee-joint before proceeding to operate. It is an old treatment; sometimes it does well, and ought to be tried I think.

DR. STEELE (closing the discussion): I have not used flexion or compression or any other method of treatment than the operative procedure described in these two cases. I have in previous cases used that method, of course, and the older methods were not followed altogether by satisfactory results. My excuse for reporting these cases and bringing them to your attention as well as the Matas method is that so many new surgical procedures are brought to our attention, that unless there is a repetition of the technic of the operation, it is apt to be forgotten or overlooked. I think it is our duty when a distinct advance has been made in surgery, such as the Matas operation has been, to place it before the surgeons of the world, and let them try the operation, report their results,

and discuss from time to time the subject, so that the technic may be made familiar to the young surgeons so that they will use it in their practice.

It was rather interesting to have two aneurysms in one patient. Furthermore, it was interesting to see the improvement made by the introduction of silver wire temporarily in one case and permanently in the other, and in addition to that I have now a case of inoperable aneurysm of the descending arch of the aorta, in which I have introduced fifteen feet of aluminum bronze wire. Furthermore, I have used electrolysis consisting of twenty dry cells, with about one and a half volts to each cell and I continued the introduction for thirty minutes of twenty-five amperes of the twenty cells, which represented forty-five volts for half an hour through a needle which was inserted in the sac, but the patient complained of no pain. The aneurysm had eroded one or two ribs, so that there was an external tumor upon the left chest over the second rib where it disappeared by absorption. Pain was the principal thing the patient complained of for about a year, but singularly from the time of the introduction of the fifteen feet of wire and the use of electrolysis, the man was able to sleep all night and has been made comfortable since. Of course, it is too early to report as to what the ultimate result will be in this case, but from the standpoint of the relief of pain it has been a success.

#### DISCUSSION ON THE PAPER OF DRS. LESPINASSE, FISHER AND EISENSTAEDT

DR. ALLEN B. KANAVAL: Considerable experience with the suture method in experimental work and in two human subjects leads me to appreciate the simplicity of this technic. Those of you who have attempted the suture of blood-vessels are aware of the difficulty attending it, particularly in smaller vessels. I have seen Dr. Lespinasse work, I know how long and patiently he has worked, and he is to be complimented on the excellent result he has attained. I cannot refrain from speaking of the fact that, it seems to me, the Chicago medical profession ought to be congratulated on its relation to the development of vascular surgery. As you are aware, a great deal of work has been done everywhere, but it has remained for men in Chicago to make the three real advances to my mind that have been made in vascular surgery in the end-to-end union of vessels. In 1889 I think it was, the earliest suture was made successfully, but at that time the work was abandoned and nothing further was done for a time. Then Abbe in 1894 published his method of end-to-end suture, which later was doomed to failure. It remained for one of our own surgeons, Dr. Murphy, to suggest the method of invagination which, as you know, has been most successful, and I dare say that if all of the cases of sutured vessels end-to-end which have been reported in the literature were collected, it would be found that the method of Murphy, in spite of certain disadvantages, has given the best results of any method of end-to-end suture at the present time. There are at least fifteen cases in the literature that have been entirely successful in which end-to-end invagination was resorted to. The next step was taken in Chicago, carried on by Carrel at the University of Chicago, in which he introduced a method he had practiced before, but perfected here, namely, that careful suture of vessels which has entirely revolutionized experimental work in vessel surgery. It has opened up a vast field for experimental work to those who have perfected themselves in the technic. It, however, is not feasible for men who are not acquainted with the technic, and who have not practiced for a long time. Moreover, it is not practical for the average man to do this operation at any particular time. It remained for Dr. Lespinasse to suggest this method; this simple, feasible method, which almost any surgeon with the average technic can perform, giving to us, as he has demonstrated here to-night and by other work, results fully equal to those procured by any other method. Moreover it is applicable to small vessels, which is not true of either the Murphy or Pyer methods. So I say Chicago should be particularly proud of these three advances. Further than this, I feel that I cannot add anything more to the subject other than to emphasize certain points that Dr. Lespinasse has made, and that Dr. Carrel has made, with which you are undoubt-



edly familiar. Particularly will I speak of the extraordinary care which it is necessary to use in dealing with the intima. Dr. Lespinasse spoke of that, but time and again I have found that the slightest traumatism of the intima with the forceps or any other means has led to thrombosis. The use of vaselin, with small needles and small silk, will give you success, no matter whether you use the suture method or the magnesium plates, but in using the suture I would warn you that it requires a great deal of care and work before it is safe to attempt that method.

#### DISCUSSION ON THE PAPER OF DR. SHAMBAUGH

DR. J. HOLINGER: There is a great practical importance connected with the investigation of tone perception. It lies in this, that as long as we have no clear theory of hearing, we cannot explain our microscopical findings in pathology of the labyrinth, and can not build up a pathology of deaf mutism. The changes that are found in the labyrinth of deaf mutes have caused considerable discussion by men engaged in our specialty, and slowly we are making headway towards an explanation. You understand very well that as long as we do not know which parts are concerned in the perception of sounds, we cannot explain why in one case deafness was due to changes in Corti's organ, and why in another case it was due to a change in the membrana tectoria, and so forth. It is evident that upon a clear theory of tone perception depends our explanation of microscopic specimens and consequently the pathology of deaf mutism.

Dr. Shambaugh has done a great deal of work on the labyrinth, and has attained excellent results. It was my privilege last summer to accompany him to several clinics in Europe, and it was gratifying to see how highly his work was appreciated. In fact, one man, who is an authority on the pathology of the labyrinth, told him that his specimens were unique.

As to Dr. Shambaugh's theory of hearing, it is original with him to put the different end organs in the labyrinth absolutely on a parallel as regards physiologic action. However, there are some points I would like to refer to which do not entirely coincide with this theory. First: The artery below the basillar membrane has only been observed in animals. It has never been seen in the human. We know that the human being hears the tone A always as A, the animal may hear it at times as C. In other words, the influence of that artery is irrelevant to the animal. Furthermore, the other changes in the basillar membrane which make it unfit for vibration are also observed in animals and not in the human, and we do not know whether the animal hears those sounds which correspond to that part of the cochlea.

A new point in favor of a vibrating basilar membrane: Dr. Shambaugh spoke about the experiments made in the clinic of Professor Siebenmann producing over-irritation of certain parts of the cochlea of guinea pigs. These guinea pigs were exposed for a long time to one strong and clear tone. Certain and always the same parts of the cochlea have been found degenerated in those animals, if the same tone was used. But another experiment has been made, namely: A pistol shot was fired quite close to the ear of a guinea pig and the animal was killed immediately afterwards. The result was that the cells of Corti's organ were scattered in all directions, so that there was absolutely no possibility of recognizing the original construction of the organ of Corti. It is impossible to explain this result of the acoustic trauma by ascribing it to the membrana tectoria, which is very soft, and without any distinct structure. It is hard to imagine how the membrana tectoria in transmitting this strong sound should have been able to destroy Corti's organ so completely. On the other hand the whole experiment explains itself, if you take the membrana basilaris as the vibrating mechanism which, through its extremely violent vibrations, throw the cells of Corti's organ, which rest upon it, out of position. An interesting part of this experiment is, that if the guinea pig is not killed immediately we find that six weeks after such an organ has been destroyed in this way, it is completely restored. If the experiment is repeated, restitution cannot take place and we find

then an irregular scar and total deafness. But all these experiments bring us closer to the point we are seeking and Dr. Shambaugh has certainly led us a step closer to it.

DR. SHAMBAUGH (closing the discussion): Regarding the disturbances in the organ of Corti brought about by a discharge of a pistol before the ear, I had an opportunity of looking over those specimens in Dr. Siebenmann's laboratory. It did not seem to me that such distortions of the cellular structures could be produced any more readily by such vibrations as might be produced in the basilar membrane than they could be by vibrations of the tectorial membrane. My impression is that such distortions are not dependent upon the vibrating mechanism in the labyrinth at all but are the result of injury due to concussion.

*Regular Meeting, Nov. 9, 1910*

A regular meeting was held Nov. 9, 1910, with the President, Dr. Alexander Hugh Ferguson, in the chair. Dr. Charles H. Mayo, of Rochester, Minnesota, read a paper (by invitation) entitled "The Ligation or Partial Extirpation of Exophthalmic Goiter." The paper was discussed by Drs. A. J. Ochsner, Arthur Dean Bevan, J. Halpenny (Winnipeg), D. W. Graham, L. Schooler (Des Moines), Alexander Hugh Ferguson, and the discussion closed by Dr. Mayo. Dr. Franklin H. Martin read a paper entitled "Significance of the Lane Kink in the Ileum."

Adjourned.

DISCUSSION OF DR. MAYO'S PAPER

DR. A. J. OCHSNER: Mr. Chairman, after the magnificent exposition of this subject that has just been made by the surgeon who has introduced in this country the surgery of exophthalmic goiter, and has developed it, both in its practical and in its scientific departments, it seems quite impossible for me to add to the subject. I believe personally that every one of you will have enough to think of about this subject without having new features introduced. You have heard the subject presented in a systematic manner. You have heard the history of exophthalmic goiter; you have heard its pathology and you have heard the philosophy of exophthalmic goiter, and all that I could add would simply be to emphasize the various points that Dr. Mayo has made.

DR. A. D. BEVAN: Mr. Chairman, I am sure you have all been very much interested, as I have been, in the presentation by Dr. Mayo, who has done such a vast amount of this work, and such excellent work.

If I could add anything to what he has said it would be in going over a little of the technic of the operations for exophthalmic goiter. I believe, as does Dr. Mayo, that the theory of Möbius has been definitely proved to be true, that exophthalmic goiter and the symptoms resulting from this disease are due to the over-secretion of the gland, or possibly at times to an altered secretion, and I think Kocher has shown that in order to cure exophthalmic goiter, basing his work on the theory of Möbius, it is our duty to diminish to approximately normal the internal secretion of the gland. How is this to be done, and at what time are we to resort to operative interference? I have had the same experience that Charles Mayo has had in losing cases where we have tried to do too much. I remember three cases I have lost where I removed one entire lobe and part of another in very sick patients, and I am rather inclined to believe if I had adopted the plan of Kocher I would have succeeded in some of these cases in saving their lives. I believe in the very bad cases we should ligate one or two thyroid arteries. As to the technic, Crile adopts a rather stealthy way, without any knowledge of the patient beforehand. Some morning he comes into the room and ligates one of the superior thyroid arteries. Personally I have not much sympathy with Crile's method of doing these operations without the full knowledge of the patient. After listening to Dr. Crile's persuasive argument one day I tried it on an intel-

ligent woman, and she never forgave me. I believe that in almost all cases ether is to be preferred as the anesthetic. In some very bad cases cocain may be used in the following way: About an hour before the operation give hypodermically one-quarter grain of morphin and 1/150 hyoscin. Then 1/1000 solution of cocain should be employed with a little adrenalin added to it.

The technic which I have adopted has been to make a little incision about an inch and a half in length parallel with the normal skin folds in the neck just at the upper border of the thyroid gland, just in front of the sternocleido-mastoid. The incision is taken down to the deep fascia. Then the sterno-cleido-mastoid is drawn to the side. Then the omo-hyoid passes right in front of the artery. There is this little piece of surgical anatomy which you should remember, and that is that the artery below the hyoid bone is internal to the carotid and the sternocleido-mastoid. You find the large artery before seeing the gland itself. Then you follow that down to the pole. In many of the cases the mere ligation of the superior thyroid will suffice. In the more radical operation the removal of one lobe of the gland, the procedure should be the Kocher incision, and ether anesthesia, as a rule. I think we owe a great deal to Dr. Charles Mayo for showing us that ether anesthesia is quite as safe in the hands of an expert, as I firmly believe it is, as cocain, in the resection of the goiter. The incision should divide the skin, superficial fascia and platysma, and should be very well dissected up, so that a large flap may be made and held by the assistant with a retractor. Then the superficial layer of the deep cervical fascia should be divided in the middle line, and the sterno-hyoid and sterno-thyroid muscles should be drawn to one side. I always ligate the superior thyroid en masse, and then the inferior thyroid. I do not believe we should ever remove more than a single lobe, and if there is a large amount of thyroid left on the opposite side I believe we should complete the operation by the ligation of the superior thyroid on that side.

I believe that we owe a great deal to Möbius, to Kocher and to Charles Mayo for teaching us the pathology and treatment of exophthalmic goiter. I believe the time has come when we can say to the patient who has come to us, especially if he comes early: "You have exophthalmic goiter. You can be cured by surgical operation with much less danger than leaving the condition alone to Nature."

DR. J. HALPENNY, Winnipeg, Man.: Mr. Chairman, I can say very little about exophthalmic goiter. With reference to the para-thyroid glands, which were referred to to-night, after a slight amount of experience in experimental work with those glands, one is compelled to conclude that at the present time the para-thyroid glands are not in the practical arena of surgery at all. There are various assumptions regarding those glands that are not fully borne out by experimental work. The statement has been made by many that if the para-thyroid glands are all removed you in every case get death by acute tetany. One is unable to find that this always occurs. One is told if you remove the para-thyroid glands alone you get death more quickly than if you remove the thyroid with para-thyroid glands. This one cannot find to be true. Death comes on more quickly with the complete operation than when one removes the para-thyroid glands alone. One finds that when the thyroids are removed and the para-thyroids left behind there is a certain change in the histologic structure of the para-thyroid, so that it takes on the structure of the thyroid. This would lead one to conclude that these glands are so closely related that the one is able to take up the work of the other to a certain extent.

In the literature one finds that the argument is put forward that the para-thyroid glands are there to check up the thyroid glands; that they are not entirely a different structure, except that they are to check up the thyroid glands, and the statement is made that the probable explanation is this: The thyroid gland normally accumulates or secretes some toxic substance which the para-thyroid glands destroy. Remove the para-thyroid glands and you have the toxic



substance accumulating very rapidly, and you get death by tetany. The fact that the resultant tissue very closely approximates the tissue when the thyroid is left behind makes it appear that these two glands have work of the same kind to do.



Fig. 1.—Parathyroid of dog, eighty-three days after thyroidectomy, showing vesicles, some of which contain colloid;  $\times 120$ ; *c.*, colloid; *e. interves.*, inter-vascular epithelial tissue; *ves.*, vesicle; *c. ves.*, colloid vesicle; *e. ves.*, epithelium lining to vesicles.

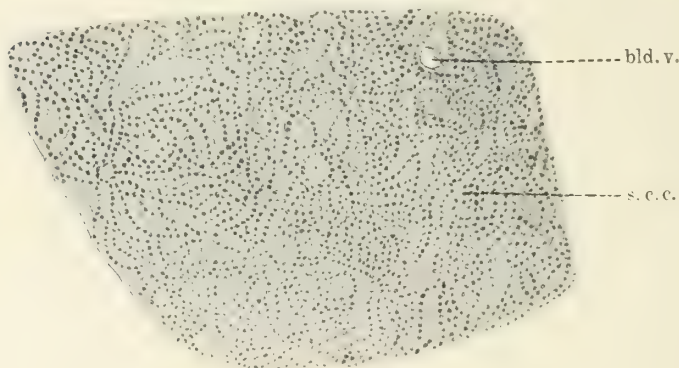


Fig. 2.—Normal parathyroid of dog;  $\times 120$ ; *s. c. c.*, solid columns of cells; *bld. v.*, blood vessel. To be compared with Figure 1.

In one dog I removed all the parathyroid glandules and verified the result by serial sections showing the capsule of each complete. In another the thyroid gland was completely removed and two external parathyroids left *in situ*. The resultant tissue in these two animals was practically the same and was intermediate between normal thyroid and normal parathyroid. A study of Figures 1, 2, 3, and 4 will show this quite clearly.

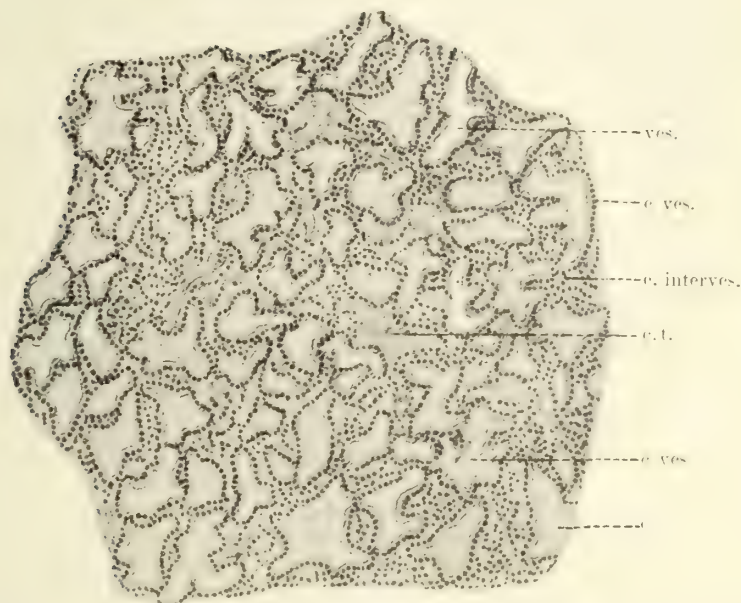


Fig. 3.—Thyroid of dog, thirty days after removal of all four parathyroids. The vesicles have become very irregular in shape and there seems to be an increase in the intervesicular epithelial tissue;  $\times 120$ ; *vs.*, vesicle; *e. ves.*, epithelium lining vesicles; *e. interves.*, intervesicular epithelial tissue; *c. t.*, connective tissue; *c. ves.*, colloid vesicle; *c.*, colloid. Compare with Figure 4.

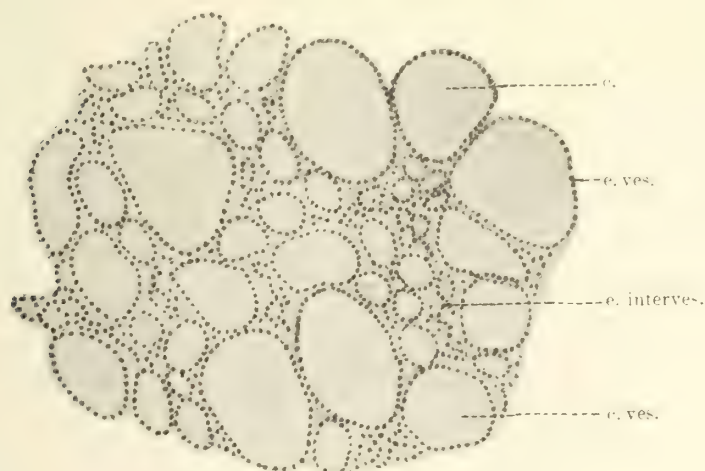


Fig. 4.—Normal thyroid of a dog, for comparison with Figure 3; *c.*, colloid; *e. ves.*, epithelium lining vesicles; *e. interves.*, epithelial intervesicular tissue; *c. ves.*, colloid vesicle;  $\times 120$ .

Dr. D. W. Graham:—I would not at this time attempt to add anything, by way of discussion, to the paper which has so ably and completely covered the subject. However, I desire to say just a word and endorse and emphasize the use of a general anesthetic for goiter operations especially in the exophthalmic type.

Dr. L. SCHOOLER, Des Moines: Mr. Chairman, I would be a very happy man, indeed, this evening if I could say anything that would add to the paper you have already heard. I can only perhaps reiterate a few things that the essayist has already laid down. I was very glad to hear him emphasize one point, and I think it will inure to the benefit of a large number of patients, and that is that all cases of goiter are not surgical cases. I have seen a good many cases of goiter operated on that in my judgment were not surgical cases; and the further point that life saving operations in advanced cases of goiter is bad surgery, as it is in a great many other cases. Operating when the patient is moribund will not add anything to the statistics in this class of cases any more than it will in any other cases.

THE CHAIRMAN (Dr. Ferguson): I would like to ask Dr. Mayo one question, and that is in regard to the class of cases where thyroidism comes on every month or two or three months, and all the symptoms are directed towards the heart and vomiting, with very little enlargement of the gland, no protrusion of the eyeball, no tachycardia between times, no trembling of muscles, and no eye-symptoms whatever. I have had two or three such cases. One was supposed to die in some of those extreme conditions of depression, became pulseless, vomited and had diarrhea, but is slowly getting better. That case was completely relieved by operation.

Dr. Mayo (closing the discussion) said: I am glad I did not take up the question of operation. I had already talked too long, moreover Dr. Bevan has handled it better than I could. We do the same type of operation. It is an operation proposed by Wolfier in 1886, and afterwards adopted by Kocher. There are one or two points concerning ligation that are worthy of discussion. If the case is so bad that you do not feel warranted in doing a thyroidectomy, the ligation of both superior thyroid arteries and nerves and lymphatics is indicated. If the resulting improvement does not permit thyroidectomy, it is better to ligate the right inferior artery leaving one artery to supply the gland, and later take out part of the gland. If you deem it better to do a thyroidectomy to begin with, and should the patient relapse with a little enlargement of the left lobe, then it is advisable to ligate the superior artery and lymphatics on that side, leaving one artery to supply the gland. If the patients relapse they can be helped by resection or ligation of the remaining lobe. We have found it necessary to ligate the third artery several times. Every tenth human being has a fifth artery coming up along the line of the trachea as an anomalous vessel.

Regarding the question of nerve injury: A number of patients have lost their voices before operation. Surgeons should not operate on the thyroid without examining the larynx. Many believe that paresis of one recurrent laryngeal nerve would produce the lost voice. It does not. A patient's voice may be all right immediately after operation, and the next day it may be gone, but you can assure that patient that it will come back again. It is a condition of temporary congestion of the nerve which has been pressed upon by the tumor. The left recurrent laryngeal nerve sets deeper than the right, and on that account it may be caught by pressure, therefore the tumor on the right lobe is more apt to produce paralysis of the left, than of the right recurrent laryngeal. We have made a careful examination of more than a thousand cases and found that approximately 30 per cent. showed some paresis of either abductor or adductor in the hard or large goiter, before operation. With the case that is not doing well under the anesthetic or during operation, and you are in a great hurry, saving the recurrent laryngeal nerve becomes a secondary consideration. Five times I have had to do a tracheotomy to start respiration. One of my earlier patients died on the table, because I accepted a moribund case.



We have more exophthalmic goiters in this country than they have in Europe. Some observers attribute it to the rapid mode of living. All animals are subject to goiter. Nearly 90 per cent. of the dogs around the great lakes have goiter. The common field gopher has a neck one-half larger than normal during the rutting season, and the deer's neck is one-third larger.

The question of the parathyroid has been brought up. Wherever Nature has given us double organs, we will stand the loss of half of them without much harm. In regard to the manipulation of the parathyroids, I am reminded of the boy who drew a picture of a lion and it looked so real it scared him. However, I do think that we should not take chances of injuring both groups of parathyroids in an operation which involves both sides of the gland.

In this country the operations which have produced tetany have been mostly secondary operations on the remaining lobe.

There are certain types of nervous symptoms to-day which are difficult to differentiate. We know that certain types of Bright's disease give us symptoms of exophthalmos. When I see a case which is hard to diagnose as exophthalmic goiter, I say that it probably is not exophthalmic. The x-ray will remove these cases, but the improvement will not last. Something can be done for these patients in the line of treatment. Many things are good; that is the unfortunate part of it. They usually get the run of everything, and when almost moribund they are turned over to the surgeon.

#### *Regular Meeting, Nov. 16, 1910*

A regular meeting of the Chicago Medical Society was held Nov. 16, 1910, with the president, Dr. Alexander Hugh Ferguson, in the chair. Dr. W. S. Thayer, Baltimore, Md., read a paper entitled "Hemolytic Jaundice," which was discussed by Drs. Frank Billings, Karl L. Koessler, Joseph M. Patton, John A. Robison, Alfred C. Croftan, and in closing by Dr. Thayer. Dr. John B. Roberts, of Philadelphia, read a paper entitled "The Operative Cure of Some Cicatricial and Congenital Deformities of the Face." This paper was discussed by Drs. W. L. Ballenger, D. A. K. Steele, Truman W. Brophy, John P. Lord, Lewis Schooler, Chas. M. Robertson, E. F. Snyder, and in closing by the essayist.

Adjourned.

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#### CLAY COUNTY

The Clay County Medical Society met at Flora, Dec. 20, 1910, in the Carnegie Library at 1:30 p. m. The following doctors were present: G. N. Steely and E. P. Gibson of Louisville; J. M. Boyles, N. W. Bowman, J. B. Hozel, Jr., Flora; John Shore, Sailor Springs; H. O. Lewis, Ingraham; B. H. Crews and J. W. Walton, Clay City, and Dr. Vosberg of St. Louis. Dr. Vosberg addressed the Society on "Abdominal Pain," which was one of the most interesting and comprehensive addresses we have ever had the pleasure of listening to. After brief discussions the society extended to Dr. Vosberg a vote of thanks. Adjourned.

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#### EFFINGHAM COUNTY

The Effingham County Medical Society held its annual meeting Tuesday, Dec. 13, 1910, at Effingham. The following officers were elected: J. H. Walker, president, Effingham; F. W. Goodell, first vice-president, Effingham; E. W. Brooks, second vice-president, Beecher City; H. Taphorn, secretary (reelected), Effingham; G. H. Haumesser, treasurer (reelected) Shumway; C. F. Burkhardt, delegate, Effingham; T. J. Dunn, alternate, Elliotstown; board of censors—E. A. Bing, Altamont; F. Buckmaster, Effingham; J. B. Walker, Effingham; O. J. Cromwell, Effingham; J. L. Kershner, Dietrich; member State Medicolegal Committee, T. J. Dunn, Elliotstown.

Following election of officers Dr. G. H. Haumesser read a very interesting paper on "Diabetes Mellitus." After thoroughly discussing the paper, the society adjourned.

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### GREENE COUNTY.

The regular meeting of the Greene County Medical Society was held at Hotel Roodhouse, Roodhouse, Friday, Dec. 9, 1910. Members present: Howard Burns, S. F. March, J. W. Adams, J. J. Ebersman, L. J. Hensler, Carrollton; F. H. Russell, Eldred; A. Royal, Wrights; C. B. Foreman, Kane; H. W. Smith, E. H. Higbee, C. R. Thomas, L. O. Hamilton, Roodhouse; G. W. Burns, H. W. Chapman, F. N. McLaren, A. W. Foreman, W. C. Day and H. A. Chapin, White Hall. Visitors present: R. J. Grimes, Marietta; W. D. Chapman, Sylvis; W. B. Dalton and T. D. Doan, Scottsville, and W. L. Kincaid, Roodhouse. Dr. McLaren was chosen Censor *pro tem.*, Dr. Shirley not being present. The application of Dr. T. D. Doan for membership was presented to the board of Censors but he not being a resident of Greene County was not eligible to membership and the application was withdrawn. On motion of Dr. Howard Burns the courtesies of the Society were extended to Drs. W. D. Chapman, W. B. Dalton, R. J. Grimes, T. D. Doan and W. L. Kincaid. The following were unanimously elected officers for the ensuing year: W. C. Day, president; H. W. Smith, first vice-president; F. H. Russell, second vice-president; H. A. Chapin, secretary and treasurer; censors: Howard Burns, H. W. Chapman and A. W. Foreman; member of the legislative committee, Dr. F. N. McLaren. After the election adjournment was taken for dinner.

Meeting was called to order at 1:15 p. m. at the City Hall. The application of W. L. Kincaid for membership was referred to the board of censors to report at the next meeting. Dr. L. J. Hensler of Carrollton read a very interesting paper on "Pneumonia" and Dr. C. B. Foreman, of Kane, reported an interesting case of "Tuberculosis of the Knee Joint, with Tuberculin Treatment and Recovery." Both papers brought forth interesting discussions by all present. The board of censors reported Kane as the next place of meeting with Dr. March of Carrollton, C. O. Bulger of Greenfield, C. R. Thomas and E. H. Higbee of Roodhouse as essayists, after which the society adjourned.

H. A. CHAPIN, Sec'y.

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### JACKSON COUNTY

The December meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club at Murphysboro Thursday, Dec. 15, 1910. Present: Drs. Molz, Sabine, Grizzell, Carter, Horstman and Essick of Murphysboro. Dr. Tweedy, Vergennes. Visitor: Dr. O. House, DeSoto. Applications of Drs. O. House, DeSoto, and W. W. House, Oraville, read and both gentlemen accepted as members. Officers elected for 1911: President, Dr. C. C. Grizzell, Murphysboro; vice-president, Dr. R. S. Sabine, Murphysboro; secretary-treasurer, Dr. Ray Essick, Murphysboro; Censors, Dr. Sabine, three years; Dr. Horstman, two years; Dr. Tweedy, one year. Adjourned.

RAY B. ESSICK, Secretary-Treasurer.

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### MADISON COUNTY

The Madison County Medical Society met in Alton Dec. 2, 1910, in the rooms of the Retail Merchants' Association, with Dr. G. Taphorn in the chair. Members present: Cook, Hastings, Kerchner, Robinson, Ferguson, J. H. Fiegenbaum, Taphorn, Haskell, W. H. Grayson, Luster, Smith, Larrabee, Johnson, Halliburton, Ihne, Burroughs, Pfeifferberger, Joesting, Wilkinson, Fisher and the secretary. Visitors: Drs. E. C. Spitze, Fred Wade Jones and John H. Wedig. Five applications for membership were read and referred to the board of censors who reported favorably on the following: Drs. J. Harrison Wedig, Granite City; Chas.

H. Merritt, Alton; Wm. J. Marney, Granite City; John L. Seebold, Madison; Fred Wade Jones, Alton; all of whom were unanimously elected.

The annual reports of the secretary and treasurer were read and referred to an auditing committee composed of Drs. Tulley and Ferguson, who examined the same and reported them correct, when by vote of the society they were approved and ordered filed. Dr. E. A. Cook moved that the sympathy of this society with best wishes be extended to the family of our fellow member, Dr. T. P. Yerkes of Upper Alton, who is in the hospital at Rochester, Minn., undergoing a surgical operation. This message was ordered sent by telephone and Drs. Cook and Pfeifferberger were appointed as a committee to execute the order.

The annual election of officers resulted as follows: President, W. H. C. Smith, Godfrey; vice-president, E. C. Ferguson, Edwardsville; secretary, E. W. Fiegenbaum, Edwardsville; treasurer, J. H. Fiegenbaum, Alton; delegate, J. M. Pfeifferberger, Alton; alternate, F. W. Kerchner, Glen Carbon; medicolegal member, Lay G. Burroughs, Collinsville; member of the board of censors for three years, J. B. Hastings, Alton.

Dr. W. H. C. Smith presented his resignation as a member of the board of censors and Dr. W. H. Grayson was elected to fill the unexpired term of **one year**.

The retiring president then introduced the newly elected president, Dr. W. H. C. Smith, who took the chair after a short inaugural address containing promises of devotion to the interests of our society. Dr. Tulley moved a vote of thanks to the retiring officers which was unanimously adopted. He also moved that the chair appoint a boosting committee to gather in new members, which was adopted and the chair appointed as such committee, every member of the society.

Dr. Luster moved that we hold a special meeting some time in January which was adopted after being amended by Dr. G. Taphorn fixing the place of meeting at Alton. The secretary was instructed to fix the date and to invite our councilor, Dr. Carl E. Black, to address us on this occasion.

Dr. Pfeifferberger announced that the board of education of Alton had instituted a series of talks to the high school pupils on the subject of health and hygiene. These addresses are to be given by various physicians of Alton from time to time during the school year. On motion of Dr. Pfeifferberger, this society expresses its commendation of above action of the board and instructs the secretary to communicate this action to the secretary of the Alton board of education.

The secretary then read a paper which was ordered printed in the next issue of "The Madison County Doctor." Some discussion followed on the subject matter of the paper, and as a result thereof a committee was appointed to draft suitable resolutions to present to the State Board of Health and to the incoming Legislature. Said Committee on Public Health and Legislation is composed of Drs. Robinson, Sims and Binney to which were added, by motion, the president and secretary.

E. W. FIEGENBAUM, Sec.

#### MCLEAN COUNTY.

The first meeting of the fifty-seventh year of the McLean County Medical Society was held at the Illinois Hotel, Bloomington, Sept. 8, 1910, President Dr. Mammen presiding. The communication of the Legislative Committee of the Illinois State Medical Society was read and discussed. This letter asked that a member be appointed on the Auxiliary Legislative Committee for the McLean County Medical Society. Many members favored having the entire Judicial Committee act in the capacity. A motion that the chair appoint a single member was made, and Dr. Fenelon was appointed, but upon his declining to serve, Dr. J. B. Taylor was appointed, the object being to concentrate the forces.



A spirit of mobilization of the medical profession of the county for the purpose of electing men and to follow up the work of conserving the interests of the medical men was very conspicuous at the meeting.

The following members then repaired to the banquet tables, viz.: Drs. A. L. Chapman, C. E. Chapin, E. L. Brown, J. Y. Bonnett, T. H. Cantrall, J. W. Dobson, J. H. Fenelon, A. L. Fox, J. W. Fulwiler, W. H. Gardner, J. Little, E. Mammen, C. M. Noble, R. H. Noble, A. E. Rogers, E. E. Sargent, J. B. Taylor, Wm. Young, R. G. Yolton, and J. L. Yolton. After a bountiful repast, Dr. A. C. Cotton of Chicago, president of the Illinois State Medical Society, addressed the company for an hour on the "Possibilities of an Organized Medical Profession," abstract of which is as follows:

This city and its surgeons are a delight to me because it was a factor of no little moment in my life. Having been prepared for teaching at the Normal University, which profession I followed a greater part of the time since, I want to talk to-night in my usual rôle, rather than that of an executive. The doctor being a man of public life, he must meet human need of every variety. He comes to be a man of sacrifice and sympathy. Men have said to me when I was fighting out a problem of public health, why do you work so against your own interest? The layman finds it difficult to see us self-elected custodian of our neighbor's well being. Now, when the ever-shifting public sentiment is really jeopardizing our livings. He again thinks that we should be able to take care of ourselves and believes it a pernicious turn we have taken. I am convinced we must conserve our interests. It reminds me of the flag of revolutionary days showing a disjointed snake proclaiming that we must unite or die. Cook County has decided to unite, having now 65 per cent of the profession enrolled in the various societies. The country don't want Cook County to rule it. It must unless the county societies attain a larger percentage of membership and let their influence be felt upon the representatives in the legislature. Cook County has twelve special societies, and fourteen branch societies. There never has been such harmony to succeed. A common foe dispels discord.

Individuality in medical men is augmented by the very nature of their profession. Many are really isolated for various reasons. One is reminded of the raw volunteers, who were marching against a common foe in good order, when a rabbit dashed across the line of march and each thoughtful after his own table dashed after it. There is no doubt that in the last quarter century medical men have benefited for the commonwealth as much as any profession by dissemination of sanitary knowledge and securing sanitary legislation. I think that we can get what is needed for our own protection, if we will only ask for it and insist that it is due us. We, therefore, should organize, be harmonious and keep abreast of all legislative efforts that affect the medical profession.

#### *Meeting Oct. 6, 1910*

The McLean County Medical Society met in regular session at the City Hall, Bloomington, Oct. 6, 1910. Dr. E. Mammen, president, in the chair. Minutes of the previous meeting were read and approved. Motion prevailed that the secretary send a note of thanks and appreciation to Dr. A. C. Cotton for the address and attendance at the September meeting. Dr. Gardner, chairman of program committee, reported that the annual program was finished and submitted the program. The work was accepted and the secretary instructed to distribute the same among the members. The president reported that in consequence of the resignation of Dr. J. B. Taylor from the auxiliary legislative committee, Dr. C. M. Rhodes had been appointed to the place.

Upon request of cases to report Dr. Bath reported an operation upon a spina-bifida with favorable results considering age of six weeks. Dr. F. C. Vandervort reported an interesting case of tetanus in a girl aged fourteen years. When the case was first seen there was some rigidity of muscles of the neck and a history of a fall upon the back of the head. The first diagnosis was an injury to the

cord in the cervical region. The second visit showed unmistakable signs of tetanus, the rigidity having extended and the jaw being locked. Questions as to injury to hands and feet, then elicited the information after much consideration on the part of the mother, that three or four weeks ago, the girl had run a rusty nail into her foot. Examination revealed the scar. Three thousand units of antitetanic serum was injected at this time and followed by a like dose the following day. The spasms were very severe and pain in the right thigh was also present and paroxysmal. She received large doses of bromids, and had two hypodermic injections of morphin, and was given some liquid nourishment. After the fourth day the spasms grew shorter and gradually farther apart, and at the end of one week she was convalescent. The interesting points are: time lost in diagnosis, the long period of incubation, and last and most important, recovery with such a small amount of the antitetanic serum.

Dr. J. B. Taylor reported a series of very satisfactory cases of extirpation of the tonsil by means of the galvanic-cautery; this being especially gratifying in children. Dr. Sargent reported a recent case of apparent appendicitis, which developed into pneumonia.

Inquiry was made into the reported infantile paralysis at Brokaw Hospital. After a complete report of the attending physicians and a general discussion it was concluded that the report was erroneous and should be refuted. The paper of the evening, on "Appendicitis," by Dr. E. E. Sargent, was then given. The writer assumed that diagnosis being made, it then devolved upon the general practitioner to decide upon the proper time to operate or decline the same. It appears that no rule has been decided upon determining or classifying operable and non-operable cases. He believes that until data are collected, which will enable us to determine when Nature is telling us to wait, or show a beacon light of safety for operating, there will still be a great number of deaths from appendectomy. The essayist felt that the question of dealing with cases after seventy-two hours duration of fever was an important one. The discussion was very extended and great interest in the paper was manifested. Medical treatment had many victories to recall, but the consensus of opinion shown during the discussion was that, if early diagnosis can be made, early operation was preferred. The members taking part in the discussion were: Drs. Sloan, Turner, Chapin, R. A. Noble, Covington, Guthrie, Gardner, Rhodes, J. W. Smith, Dobson and Dr. Mammen.

Dr. E. P. Sloan reported a successful recent nephrocolopexy.

The essayist of the evening, Dr. W. E. Guthrie, discoursed upon the "Significance of Abdominal Pain." The address was full of interest to the entire attendance.

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## MORGAN COUNTY.

### *November Meeting*

The Morgan County Medical Society met Thursday evening, November 10, at the Pacific Hotel, Jacksonville, with the following physicians in attendance: Drs. Adams, Black, G. W. Bradley, Bowe, Cole, Crouch, J. U. Day, Dewey, Gailey, Gregory, Hairgrove, Hardesty, McLaughlin, Norbury, Norris, Pitner, Reid, Stacy, Stubblefield, Treadway, Vertrees, Clampit, J. K. Elder, J. M. Elder, Sharpe and J. W. Eckman of Winchester. Dr. Grace Dewey presided. Drs. L. H. Clampit, F. E. Munch, and Anne H. McF. Sharpe of Jacksonville, J. M. Elder of Franklin and Lee W. Fulton of Alexander were proposed for membership.

Dr. F. P. Norbury, a member of the society, now Superintendent of the Kankakee State Hospital, was present for it is hoped, his first annual address to his former colleagues and presented in a very graphic and interesting manner, "The Psycho-Neuroses, their Present Status and Methods of Treatment." Drs. E. L. Crouch and Edward Bowe discussed Dr. Norbury's paper.

The members of the society were cordially invited by the members of the Woman's Club to hear Dr. I. D. Rawlings of Chicago speak on the subject of "Medical Inspection of Schools." An invitation was received for the annual dinner and banquet of the Sangamon County Medical Society which occurs December 14 in Springfield.

#### *December Meeting*

The Morgan County Medical Society held its annual meeting Thursday evening, December 8, at the Public Library, Jacksonville, Illinois, with the following physicians in attendance: Drs. Adams, Black, Campbell, Crouch, Dewey, Gailey, Gregory, Hairgrove, Hardesty, Hinton, Hughes of Waverly, King, Leonard, Milligan, Norris, Ogram, Reid, Stacy, Webster of Murrayville and Woltman. Drs. L. H. Clampit, F. E. Munch and Anne H. McF. Sharpe of Jacksonville, J. M. Elder of Franklin and Lee W. Fulton of Alexander were elected to membership. Report of the retiring president, Dr. Dewey, covered the work of a successful year in the society. In addition to the papers presented by local physicians, Drs. Harris of Chicago, Bartlett of St. Louis and Norbury of Kankakee, made addresses. There are 58 physicians in the county and state membership of the society in good standing, eleven doctors in the county are eligible to membership and twelve are not eligible. Reports of the special committees on Contagious Diseases and Medical Inspection in Public Schools show satisfactory progress. Election of officers for the ensuing year resulted as follows: President, H. C. Woltman, Jacksonville; vice-president, N. J. Hughes, Waverly; secretary, A. R. Gregory, Jacksonville; treasurer, A. L. Adams, Jacksonville; librarian, Carl E. Black; censor, for three years, H. C. Campbell.

Dr. G. W. Miller of Woodson, who for many years has been a member of the society and an active practitioner in the county, was elected to honorary membership.

GEORGE STACY, M.D., Secretary.

#### THE PSYCHO-NEUROSES: THEIR PRESENT STATUS AND TREATMENT\*

FRANK P. NORBURY, A.M., M.D., SUP'T KANKAKEE STATE HOSPITAL

The growth of interest in abnormal psychology as shown in modern research work and current general and medical literature, warrants the discussion of this subject. Only a résumé will be attempted, and of this, only such as will give comprehensively the attitude of modern psychologic medicine. The psychiatrist of twenty-five years ago would hardly recognize his specialty in the nomenclature, classification, methods of analysis and therapeutics of to-day. Likewise the neurologist of ten years ago or even five years ago, who would adhere to his beliefs concerning the psychoneuroses then prevalent, would find he had not kept step with progress.

To the patient research worker we owe this progress in psychiatry, just as we owe to him the advances in other fields of practical medicine. By psychoneuroses is meant mental disorders, due to some derangement in the functioning of the nervous system, without recognizable changes in the organs of the body. Included in this definition are hysteria, psychasthenia, the anxiety psychoses, etc. Neurasthenia in the light of its modern conception is, in my judgment, a separate and distinct entity, capable of being differentiated and properly belonging to the fatigue neuroses. While it is true that hysteria also has, or may have a fatigue basis, yet it has more, viz.: a profound psychologic etiologic factor. Janet says: "Fatigue is the starting point of all great neuroses." This, my experience has verified; in an accounting of major and minor ailments coming within this scope, we find their variation to be in degree and not in kind. To insure a neurosis, there must be a proper soil; a certain psychic attitude; a susceptible condition of mind, which directly or indirectly is the outgrowth of exhaustion, prolonged, sustained, either in the patient or in his forebears. Given such a soil and with an environment where misadaptation is in evidence,

\* Abstract of address before the Morgan County Medical Society, Nov. 10, 1910.



either through faulty training, psychic discordances or disruptive experiences with faulty beliefs, or other unsocial conditions in general, and we have the field fertilized for the growth and development of a psycho-neurosis. These and a host of other possible conditions, largely individual but psychic in nature, lay the foundation and contribute to the superstructure of the neuroses in their building. This building of the superstructure is through the association of ideas, the feeling tones as expressed by the emotions and other conditions leading to the formation of what we term complexes. A complex exists in every psycho-neurosis, and to grasp the growth of its formation, its subsequent dominance in thought and conduct, we need to understand the psychologic principles which govern its evolution. It is through the work of the research student, that these principles have been developed. The technic of their application in clinical work, is of equal importance to the technic of the surgeon, or the laboratory worker in other fields of clinical pathology. Hence, the importance of acquaintance with the psychologic principles.

Dr. Norbury then briefly stated these principles governing association of ideas, of feelings, emotions, sensations, movements, visceral functions, etc., showing the linking in systematic formation of them all, in the formation of a complex, and how the stimulation of one stimulated all and caused reactions which may work for the weal or woe of the individual.

He then said: The complex thus formed contained both psychic and physical factors, just as is demonstrated in the educational methods found to exist in our every-day experience from the cradle to the grave. These being shaded by our emotions, our intellection, etc. Prince says: "The education of the mind and body depends on the artificial synthesizing of functions into a complex adapted to the end or useful purpose." "By the same means the principal functions may be synthesized by education into a complex which does *not* serve a useful purpose, but is harmful to the individual. When this occurs, we call it abnormal, and it then becomes a psychoneurosis."

It is evident, then, that a psychoneurosis is a perversion of a normal process; it may have its origin in an acute experience or by a constantly repeated experience (by education). It should be our purpose to analyze this experience and to study it we call to our assistance the means suggested by Jung, whereby we study the association of ideas, feelings, etc., by what is known as the association process. By Jung's method we discover the constellations, and with the clue thus given we follow up by Freud's psychic-analysis, the whole complex until it is unravelled. This analysis gives relief to the individual, because it releases him from the unconscious thralldom of an abnormal psychic or mental state, which may not only impair his happiness and comfort, but jeopardize his usefulness and truly alienate him as a member of a family and as a citizen.

Dr. Norbury then explained Jung's method of association tests, showing how by a number of words (100 carefully selected words being used by Jung) being slowly given to the patient, with instructions to at once respond with word or words entering their minds at the suggestion of the word given them—the time required for this reaction being carefully measured by a stop watch. Then when all of the words have been given out, a study of reaction time is made, the time being grouped, and from this summary the clew is given to the nature of the complex. To fully understand the significance of these findings one must be familiar with memory processes; with memory conservation, dissociation, etc.,; with stimulation, which reveals the residues of experience; with memory of feeling tones as taught by James, Prince, Janet and others.

With these findings we proceed by Freud's method of analysis to study the case thoroughly. Freud uses purely psychologic methods founded on the principles stated. He teaches that the complexes are made up of three elements: 1, intellectual elements; 2, emotional or affective tones; 3, certain conative tendencies. These elements make up the complex as a whole, and that complexes are permanently present, but not constantly active. A complex only becomes active when stimulated in some way. This stimulation occurs wherever one or more

of the ideas belonging to the complex is aroused to activity either by some external event or by some memory association occurring within the mind itself as in dreams.

Dr. Norbury explained Freud's dream analysis, and concluded his address with a recital of work being done in the Psychopathic Service at Kankakee State Hospital, especially the work of Dr. Charles F. Read.

Dr. Norbury especially emphasized that Jung's association tests must be preliminary to Freud's analytical methods. Further, that the personal confidence of the patient must be obtained, and that real, genuine, honest sincerity must be the basis of the examiner's attitude toward the patient. Without this the most comprehensive or astute methods will fail.

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### ROCK ISLAND COUNTY.

The regular bi-monthly meeting of the Rock Island County Medical Society was held at the Manufacturers Hotel, Moline, Oct. 11, 1910. The minutes of the August meeting were read and approved. The secretary read a communication from President Andreen in answer to the society's letter of appreciation of Augustana College permitting the establishment of a medical library in the new Denkmann Memorial building. The Chicago Medical Society through its secretary extended the local society an invitation for a joint meeting of the two organizations. This was accepted and the chair appointed Drs. Hollowbush, First and Mueller as a committee to arrange for such a meeting. The names of Drs. J. W. Seids and E. G. Norman of Moline, were balloted upon for membership. Both were elected. After dining, Dr. Alfred C. Cotton of Chicago, president of the Illinois State Medical Society, was introduced and spoke on "Medical Organization." He remarked that Rock Island County physicians seemed to be well organized and therefore his topic was somewhat superfluous. Dr. Cotton enumerated the many advantages of a strong organization, interspersing his remarks with appropriate reminiscences and in conclusion dilated upon the altruistic nature of a physician's vocation. Present: Drs. Bennett, Eyster, First, Meyer Wiggins, Hall, Eddy, Norman, Wright, Williams, Snively, Chapman, Lamping, Rhinehart, Hollowbush, Gardner, Bailey, Leopold, Souders, Sala, Long, Sargent and Mueller. Guests: Dr. A. C. Cotton of Chicago; Drs. Rendleman, Littig and Bendixon of Davenport, Ia.; Drs. Love and Littig of Iowa City, Ia.

ALBERT N. MUELLER, M.D., Sec.

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### VERMILION COUNTY

The Vermilion County Medical Society was called to order by the president, Dr. Benjamin Gleeson, at 8:30 p. m., Dec. 12, 1910. Minutes of previous meeting were read and approved, after which Dr. Fisher presented an interesting neurotic case. No members felt disposed to make a diagnosis in the short space of time spent in examining the case, but the Wassermann test was suggested.

After the case was shown, Dr. Cochran read his excellent paper on "Infantile Paralysis from a Bacteriologic Standpoint." The author was liberally complimented on his paper, which was the subject of much discussion from a clinical point of view. Based on the recent findings and advice from the State Board, it was decided to quarantine every family in which it occurs. Dr. Becker, our health officer, advises eleven days' quarantine in each case.

After Dr. Cochran closed the discussion, the society proceeded to elect officers for the coming year, as follows: president, Dr. E. E. Clark; vice-president, Dr. J. G. Fisher; secretary and treasurer, Dr. Solomon Jones (reelected); censor, Dr. Leo Fairhall.

Dr. Coolley moved that the secretary act as delegate to the state meeting at Aurora, to be held in May, 1911. Carried.

Dr. Glidden suggested that the county society issue each month a little bulletin setting forth the proceedings of the month's meeting to be mailed to each

member of the society, he thinking it might act as a stimulus to those not present, hence encourage a fuller attendance. No action was taken in this matter.

Adjourned for lunch prepared by Mr. Eli Brown, caterer. After the lunch a smoker followed. The cigars were the compliments of the Schultz Drug Company. The following were present: Drs. Benjamin Gleeson, Solomon Jones, C. E. Wilkinson, H. F. Becker, O. W. Allison, H. S. Babcock, Robert Clements, G. L. Williamson, H. B. Downs, B. Taylor, E. B. Coolley, W. R. Tennery, M. Howard, S. W. Jones, J. G. Fisher, George Steely, E. E. Clark, F. M. Mason, R. A. Cloyd, W. A. Cochran, J. B. Morton, H. F. Hooker, S. C. Glidden, F. N. Cloyd, G. W. Fuller, A. Merrill Miller, T. E. Walton, Leo Fairhall, McIntosh, V. C. T. Kingsley, Fred Baumgart, R. L. Hatfield, C. H. Brown, S. L. Landauer, A. E. Dale, O. H. Crist, H. N. Bascom, Peoria, Ill., visitor.

SOLOMON JONES, Secretary and Treasurer.

### WARREN COUNTY

The Warren County Medical Society met in the County Court Room, Monmouth, on Friday, Nov. 4, 1910. After the routine work of the society was transacted Dr. S. C. Stremmel of Macomb presented a paper entitled "The Modern Conception of Extra-Uterine Pregnancy." He said that when he graduated in medicine twenty-one years ago, his conception of extra-uterine pregnancy was certainly embryonic, that there was very little known about the real facts concerning this very common condition until within the last few years. A few years ago appendicitis had the floor for discussion and now extra-uterine pregnancy has, and should have, until the real facts are threshed out. It is always caused by some injury to the Fallopian tube, inflammatory or otherwise, that is, that anything that interferes with the passage of the ovum from the ovary to the uterus would cause it. The symptoms were explained in detail. An interesting statement was made in regard to the prognosis. Some very eminent men say that 70 per cent. of these cases will eventually recover without operation. It was his opinion that 50 or 60 per cent. would be nearer. The treatment is surgical, as soon as the diagnosis is made, excepting cases that were dying when first seen. The time to operate is early, before rupture occurs, but many cases are not seen by the doctor until rupture has already occurred.

Dr. Ralph Graham of Monmouth presented a paper in which he reviewed the literature of the recent epidemics of poliomyelitis.

Dr. Ralph Webster of Chicago, in discussing the subject "Circulatory Stimulants and Depressants, Their Indications and Contra-indications," laid his foundation by bringing out the salient features of the anatomy and physiology of the heart and circulatory system. Considerable emphasis was laid on the regulation of the beat, the bundle of His being discussed at length. The pathology of the various cardiac disturbances was then brought out, and the results of abnormalities in the various cardiac valves was elaborated. Special stress was given to the point that no drug should be used in circulatory disturbances, unless a special therapeutic indication existed. The indications and contra-indications for the use of digitalis and allied drugs, strychnin, caffeine, aconite and the nitrites were then taken up.

This meeting was well attended by members of the county society and a number of the Galesburg physicians were present. A general discussion of papers presented by Drs. Stremmel and Webster followed their reading, after which Dr. A. G. Patton of Monmouth reported his experiences in using Beck's paste in tubercular sinuses, presenting a case in which he had successfully used it in a tubercular hip joint.

### WHITE COUNTY

The White County Medical Society met at the offices of Drs. Lehman and Niess, Nov. 22, 1910. The following members were present: Drs. Sibley, Boyer, Ellis, Staley, Long, Lehman, Niess and Leslie. Time and place of next meeting



voted some time in February. The name of Dr. McHenry was presented for membership and passed on. Admitted. Motion made by secretary (Niess) to revise White County Medical Society fee bill, and to have chairman appoint committee to revise the same and report at the February meeting. Committee composed of Drs. J. L. Lehman of Carmi, W. Ellis of Grayville and F. Leslie of Maunie. The following program was rendered: 1. "Case of Eclampsia," by Dr. W. Ellis of Grayville. This was an interesting and ably prepared paper, touching on the important features of disease in regard to etiology, pathology, symptomatology, treatment and prognosis, with report of case. This paper was discussed by members of the society. 2. "Varicose Ulcers, Treatment and Report of Cases," by Dr. F. Leslie of Maunie. This also was an interesting paper and ably discussed by members of the society. Adjourned. J. NIESS, Secretary.

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## Book Notices.

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**HYDROTHERAPY:** A Treatise on Hydrotherapy in general; its application to special affections; the technic or processes employed; and use of waters internally. By Guy Hinsdale, A.M., M.D., lecturer on Climatology, Medico-Chirurgical College of Philadelphia. Octavo of 466 pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1910. Cloth, \$3.50 net.

Dr. Hinsdale's work on the water cure is probably the most complete and satisfying work that has yet appeared of American origin. As the doctor says in his preface, "hydrotherapy by the use of modern apparatus is a powerful aid in therapeutics, rapidly growing in popularity as the knowledge of its technic becomes more widely diffused." It seems strange that this treatment in America continues to lag so far behind Germany, Austria and France, and it is high time that our medical men prepare themselves to get out of hydrotherapy all there is in it. That is not to say that no other means are applicable in connection with the water cure. We therefore welcome this excellent hand-book and hope that it will have a wide patronage.

**THE PHYSICIANS' POCKET ACCOUNT BOOK.** By J. J. Taylor, M.D. 212 pages. Leather. Price \$1 postpaid. J. J. Taylor, Publisher, 4105 Walnut St., Philadelphia, Pa.

The especial feature of this book is a system of accounts whereby each transaction can be recorded in a moment's time in plain language, so that it is strictly legal as evidence in court without personal explanation, and so arranged that any patron's account can be ascertained on demand without any posting. There is only one entry of each transaction, and this in such a form that no posting is ever required. It saves time, labor and worry, and insures that your accounts are always up to date, so that you can send statements out every month without any delay and can inform any patron, wherever you may meet him, of the exact state of his account. This feature alone in the course of a year will secure payments for you—that would otherwise be missed—sufficient to buy your account books for a whole lifetime. It is the simplest, quickest and easiest legal account system on the market.

The book also has some easy and practical directions for billing and collecting, some excellent business and legal hints, some valuable forms for emergency use, such as "dying declarations," "form for wills," etc., an average medical and surgical fee bill, besides miscellaneous tables, clinical directions, etc. Having a good cash account department and various clinical records—vaccinations, deaths and confinements—it forms a complete year book for the physician's pocket.

For those who prefer to keep their accounts at the desk, the same system has been enlarged into a desk size book of 400 large sized pages, the price of which is only \$5 per copy.

## NEWS OF THE STATE

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### PERSONALS

Dr. Titus P. Yerkes, Upper Alton, has gone to Rochester, Minn., for a surgical operation.

Dr. Alice Conklin suffered \$3,000 loss in a fire which almost destroyed the apartment building in which she resided, November 18.

Dr. Frank L. Clemens has been appointed a member of the medical staff of Graham Hospital, Canton, vice Dr. D. Dennison Kirby, resigned.

Dr. Frank Allport is spending several weeks in New York and other eastern cities studying the work done in the various eye and ear hospitals.

Dr. William E. Morgan, who was operated on for appendicitis at Mercy Hospital, November 25, is reported to be going on well toward recovery.

Dr. and Mrs. Isaac K. Abt have returned from abroad where Dr. Abt has been making a study of hospital construction, with especial reference to hospitals for children.

Dr. Charles M. Noble, Bloomington, who was painfully injured in a machinery accident in Sunflower, Miss., has been brought to St. Joseph hospital, Bloomington, and is reported improving.

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### NEWS

—Dr. R. C. Bradley, Peoria, was reelected county physician by the board of supervisors.

—Dr. Margaret D. Mitchell of Aurora, under arrest on action of the coroner, threatens to make things interesting for the prosecution.

—At a meeting of the Physicians Club of Monmouth, December 2, Dr. Chauncy Sherrick was elected president and Dr. Joseph R. Ebersole secretary.

—Dr. G. M. French of Peoria was elected medical director of the Court of Honor of Springfield, to succeed Dr. J. M. White, whose death occurred recently.

—Walter Farwell, Lake Forest, has donated to the recently organized Lake Forest Hospital Association an acre of land for a site for the hospital to be erected.

—If you are drunk and quarrelsome at 2 a. m., better not go home and throw your wife through the window. It will put you in bad with your mother-in-law.

—The Norwegian Deaconess Home and Hospital at 1138 North Leavitt Street, Chicago, dedicated November 20, will accommodate 100 patients and fifty deaconesses.

—S. Hirschfeld, a graduate of the National Medical School University, charged with practicing medicine without a license, is said to have been found guilty and fined \$200.

—Dr. J. H. Bacon of Peoria was operated on for appendicitis at the Proctor Hospital on December 29. He is reported doing nicely since the operation and expects to be home soon.

—Mr. Charles B. Ball, chief sanitary inspector of the Chicago Department of Health, in a recent address at Freeport advised the installation of school medical inspection as the best means of lowering the death-rate of that city.

—Dr. L. Emmett Holt, professor of diseases of children in the Medical Department of Columbia University, New York City, gave the annual address before the Chicago Pediatric Society, December 17, on a "Study of 300 Cases of Acute Meningitis in Infants and Young Children."

—The new president of the Cook County Board has received letters from many prominent physicians of the city recommending that Dr. Haim I. Davis be retained as county physician on account of the record he has made in that office, and expressing the hope that political reasons will not cause Dr. Davis's removal.

—The Chicago Charity Hospital was closed in November for lack of public support and the patients were transferred to the Wesley Hospital, by which the building was purchased. The charity hospital had an honorable career for over twenty years and became too burdensome for the directors in the face of public indifference.

—In the third trial of the case of Mrs. Carrie Smith against Dr. Ernest B. Mammen, Bloomington, in which damages were claimed on account of the alleged leaving of a sponge in the abdominal cavity after a surgical operation, a jury in the circuit court is said to have brought in a verdict for the plaintiff, assessing damages of \$1,500.

—It is difficult to keep track of the nominal head of the Cook County Institutions whether *de jure* or *de facto*, under the kaleidoscopic series of discharges, resignations and appointments instituted by the president and opposed by other members of the Cook County board. The only obvious fact is that the rapid-fire changes are ruinous to discipline. Dr. O. C. Willhite deserves the sympathy of all who wish to have the medical positions in any public institutions freed from partisan politics.

—The September issue of the *Bulletin* of the State Board of Health is devoted to the consideration of acute poliomyelitis, and includes articles by Dr. Israel Strauss, New York City, on "Pathology"; by Dr. Simon Flexner, New York City, on "Experimental Poliomyelitis"; "A Review of the Literature of 3,532 Cases," by Dr. Frank E. Coulter, Omaha; "Acute Poliomyelitis," by Dr. J. S. Fowler, Edinburgh, Scotland; "Surgical Treatment of Infantile Paralysis," by Dr. Max Herz, Sydney, Australia; and "Report of Epidemics," by Drs. F. M. Armstrong, St. Paul; Colin K. Russel, Montreal, and C. A. Anderson, Stromsberg, Neb.



## MEDICAL SOCIETY NOTES

—The Peoria City Medical Society met Tuesday evening, Dec. 20, 1910, and elected the following officers: president, Dr. A. L. Corcoran; first vice-president, Dr. W. B. Short; second vice-president, Dr. J. H. Ulrich; censor, Dr. Edward Hasson; secretary-treasurer, Dr. E. W. Oliver; delegate to state society, Dr. George W. Parker; director to represent the Peoria City Medical Society in the newly organized "Peoria Association of Commerce," Dr. Clifford U. Collins.

## PEORIA VS. OPTOMETRY

*Be it Resolved*, That the members of the Peoria City Medical Society are unalterably opposed to the proposed "optometry" bill, which is to be introduced at the coming session of the State Legislature.

That the granting of a license by the state to any person to practice "optometry" who has had little or no training in the fitting of glasses—a few weeks at the most—who knows absolutely nothing as to the normal or diseased conditions of the eye and who would be examined by a board composed of their own members—none of whom have ever had any medical training whatsoever—is contrary to the welfare of the people of the State of Illinois in general, a large majority of whom, in case the bill becomes a law, could not distinguish, if both are granted licenses by the state, between the qualifications of the regularly trained physician and those of the so-called "optometrist."

That no member of this society shall support this proposed legislation in any manner whatsoever, nor sign any petition in support of same, and if such has already occurred, that such name shall be immediately withdrawn.

That this society does not seek to stop opticians from selling glasses nor the right of individuals to have their eyes examined by anyone, but this society does object to the granting of any license by the state to non-medical persons for the fitting of glasses or the giving of advice on medical subjects.

E. W. OLIVER, Sec'y.

## PUBLIC HEALTH

—Owing to the greatly increased prevalence of diphtheria in Chicago the finance committee of the city council voted to appropriate \$10,000 to fight the epidemic. This will provide funds to run the health department laboratory night and day, and also for additional medical inspectors for the public schools. Bacteriologic examination of throat cultures from the pupils in several schools disclosed diphtheria carriers who, while not sick themselves, were carrying the disease to others.

—Victory for the "open-air" room plan in public schools of Chicago was won recently at a meeting of the buildings and grounds committee of the board of education. Principal William E. Watt of the Graham School, originator of the "open-air" idea, reported the success of the experiment as he had carried it on so convincingly that the committee granted him permission to establish twenty rooms of his school along his plan. This will leave only a few rooms for those pupils whose parents object to the new idea.

—Dr. George T. Palmer, superintendent of health, Springfield, is trying to secure prompt and complete returns of contagious diseases

from physicians. In November four deaths from diphtheria occurred before the cases were reported. "The fact that four deaths occurred from diphtheria with less than a dozen cases under quarantine led to the presumption that physicians are not reporting cases as generally and as promptly as they should." In one of the fatal cases the parents of the victim refused to permit antitoxin to be administered.

—When the weather becomes cold the easiest thing to do is to shut the windows. This is easy, but it has no other advantages. If the windows are closed tightly the air will become foul and the danger from consumption and pneumonia is increased. If you will notice the bedroom windows as you pass along the street in the early morning you will see that most of them are tightly closed. You will be sure the air of these rooms is dangerously foul. As the weather gets colder the danger from contagion increases. Carelessness on the part of those who have had scarlet fever or diphtheria takes many lives at all seasons, but it is most harmful just at this season.—*From Bulletin, Chicago Department of Health.*

—Diphtheria cases in Chicago began a gradual increase in September culminating in the week ended December 10 with 653 cases, including 348 carriers of bacilli detected among the school children by the medical examiners, who took cultures from all the children in school rooms having several cases of diphtheria. Much opposition developed to the modified quarantine devised by the department but a rapid decrease in the number of cases following the enforcement of the rule requiring "carriers" to stay at home. Treatment by the family physicians to destroy the vitality of the bacilli in the fauces enabled the examiners to secure negative cultures on the third to the fifth day in most of the carriers and the pupils lost on the average only a week from school.

—Chicago's health as measured by the death returns, has not been as good the past year as the preceding year. The year closed with a gross death-rate of 15.1 per 1,000 of population as against 14.6 in 1909; 14.5 in 1908 and 15.7 in 1907. As compared with the average death-rate of the preceding ten years the 1910 rate is 0.5 per 1,000 inhabitants higher. The preventable diseases killed almost 15,000 Chicagoans in 1910, nearly one-half the total mortality. Pneumonia leads with 5,679 deaths, tuberculosis is second with 3,812 deaths, while diarrheal diseases claimed 3,084 children under 2 years of age. Diphtheria killed 840 as compared with 675 in 1909 and 564 in 1908. About 65 per cent. of the 10,000 deaths of children under the age of 5 years was due to preventable diseases.

—The Chicago Department of Health offers a series of lectures on the subject of "Milk Pasteurization" for men engaged in this work, the general principles concerned in the proper heating and handling of milk. The first lecture, Dec. 29, at 117 Market Street, was an introductory lecture given by W. A. Evans, commissioner of health, and followed by a demonstration on elementary milk bacteriology by Dr. F. O. Tonney, director of the municipal laboratories. The other lectures are as fol-

lows: January 5, "How Bacteria Get Into Milk and the Effect of Heat and Cold on Bacteria," J. C. Johnstone; January 12, "The Essentials of Proper Milk Pasteurization," Dr. B. Perry and J. C. M. Krueger; January 19, "Care of Milk After Pasteurization," Dr. Gottfried Koehler.

## AEROGRAMS

Fresh air is the best life assurance agency.

Foul air befouls the body—be dirty and you'll be sickly.

Pure air makes pure blood—pure blood makes you disease-resisting.

Colds are "catching"—easy to catch but hard to lose.

To arrest a cold, liberate the foul air in your room.

"Dope" for colds is "meat" for the doctor.

Pneumonia is the child of faulty pneumatics.

Coddle yourself and you flirt with pneumonia.

The man with a chest protector can shy no stones at the woman with the lace hose and peek-a-boo waist.

Get the fresh-air habit.

Ventilate.

—From *Bull. Chicago Department of Health*.

## DON'TS FOR DIPHTHERIA

Don't delay.

Don't wait until to-morrow if the child complains of sore throat. Call the doctor to-day.

Don't delay giving antitoxin because you haven't the money in your house to pay for it. You can get it free by calling the Department of Health.

Don't say "I don't believe my child has diphtheria. I'll wait a day or two and see." If you don't know, find out.

Don't go into a neighbor's house when you see a red card on the front. That means "*stay out*."

Don't take any chances with diphtheria. Better be safe than sorry.

Don't cheat the doctor out of his fee; the undertaker will charge more to bury than the doctor will to cure.—*From Bulletin, Chicago Department of Health*.

—In our efforts to stop diphtheria we have quarantined "carriers" of diphtheria germs when found in school. The practice is to culture all throats in a school-room to which a case of diphtheria has been traced. Any school child, so cultured, found to have diphtheria germs in the throat, will be quarantined at home until a subsequent culture proves negative. None but the carriers will be quarantined. Other children in the family will be allowed to go to school. Visitors in the home are prohibited. A special warning card will be posted on the front and rear of the house or apartment.

The card is white, on which is printed in large letters:



## CARRIER OF DIPHTHERIA HERE—KEEP OUT

Below this on the card is printed matter explaining the requirements of the department in the case, as follows:

"A diphtheria 'carrier' may not be sick, but has diphtheria germs in the throat and can spread diphtheria. Such persons will be required to stay in the house until the throats are free from germs. Cultures will be taken to determine this. Other persons in the house can go in and out. Neighbors and friends must stay out. Milkmen must take the usual precautions. These rules must be obeyed until this warning card is taken down by the Department of Health."

A printed slip is handed to the family, which reads as follows:

DEPARTMENT OF HEALTH—CITY OF CHICAGO—INSTRUCTIONS FOR  
PARENTS IN CASES OF DIPHTHERIA CARRIERS

A microscopical examination of a culture from the throat of your child shows the presence of diphtheria germs. The child may not feel sick, but diphtheria germs are dangerous to anyone having them in the throat, and to others as well.

For the safety of the child and other members of the family you should have your doctor use something to destroy the germs now in the throat. *Do not* take the child to the doctor. Call the doctor in or see him yourself.

Cultures will be taken from the throat to tell when it is safe.

For the safety of the neighborhood the Department of Health will require the child to remain in the house until the throat is free from germs.

Other persons living in the home can go in and out.

Neighbors and friends must be kept out of the house.

The milkman must take the usual precautions.

These rules must be obeyed until the warning card is taken down by the Department of Health."—From *Bulletin, Chicago Department of Health*.

—Better treatment and better control of diphtheria have prevented fully 25,678 deaths from that disease in this city in the last fourteen years. By far the greater part of the credit for this remarkable saving is due to the employment of antitoxin.

Before antitoxin came into use the diphtheria death rate averaged 136 for each 100,000 inhabitants each year; in the last fourteen years, during which antitoxin has been employed, the diphtheria death rate has dropped to thirty-six—a saving of 100 lives in each 100,000 people for each year.

Remarkable as this saving appears when compared with reductions which have taken place in certain other preventable diseases, it is not nearly as great as it should be in view of the positive curative and preventive agency which we have at our command.

Antitoxin will cure practically all cases of diphtheria—if the antitoxin in proper doses is given in time. It will prevent the development of the

disease in those who have been exposed—if the proper immunizing dose is given in time.

The deaths which to-day are occurring from diphtheria are due chiefly to ignorance, carelessness or neglect—the parents of the victims usually being the guilty parties. Sometimes the doctor is the sinner.

Failure to pay heed to the oft-repeated warnings regarding the dangers of neglecting “simple sore throats,” failure to call the doctor in the earliest stages of the disease, neglect to secure immediate treatment of the cases and of immediate immunization of the contacts is costing many an innocent little child its life. The blame must be placed where it properly belongs—on the parent, in 99 out of every 100 cases.

Poverty is no excuse for failure to secure the necessary treatment to save your child's life. Antitoxin is as free as water—it can be secured by anyone at any of the twenty-eight free antitoxin stations which have been established by the State Board of Health throughout the city.

All that the parents are required to do in order to save their children's lives is to *act promptly*. At the first symptoms suspicious of diphtheria, such as sore throat, send for your physician. Don't wait to see what to-morrow's developments will be. A few hours' delay may cost the life of your child—it's costing too many children their lives to-day; it's costing many parents untold anguish.

If antitoxin is given on the first day of diphtheria there will be no deaths; if on the second day, nearly all of the cases will get well; if on the third day, most of the sick children will recover; if on the fourth day, large numbers will die. Later than the fourth day antitoxin does very little, if any, good.

Give enough antitoxin on the first day—2,000 units will usually do. On the third day 5,000 units is usually required. On and after the fourth day less than 10,000 units is seldom of service.

In diphtheria cases *be up and doing—delay means death*. If you cannot employ a physician call up the Health Department.

And remember that many “simple sore throats” are nothing more nor less than diphtherias; of grave danger to the patients and spreaders of the infection to others.—From *Bulletin Chicago Department of Health*.

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### CHANGE OF LOCATION

Dr. R. B. Crews has moved from Winoose to Clay City, Ill.

Dr. G. W. Pridmore, Clay City, has retired from medical practice.

Dr. E. A. Everett has removed from Alhambra, Ill.; to 1131 West Indiana Street, Evansville, Indiana.

Dr. William Weaver Hartman, Chicago, has moved to his new office and residence, 5043 Kenmore Avenue.

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### MARRIAGES

BOHUMIR J. DVORSKY, M.D., to Miss Rose M. Votipka, both of Chicago, November 24.

CHARLES HENRY McDONALD, M.D., to Miss Vesta L. Vradenburg, both of Arthur, Ill., November 17.

HERMAN THEODORE BECHTOLD, M.D., O'Fallon, Ill., to Mrs. Elle Merch-Bechtold of Belleville, Ill., November 17.

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## DEATHS

E. L. HERRIOT, M.D., for many years a resident of Jacksonville, died at Fort Worth, Texas, Nov. 30, 1910.

JOHN R. CHATHAM, M.D., Washington University, St. Louis, 1873; died at his home in Tamms, Ill., November 13, from cerebral hemorrhage, aged 68.

KAMES COLUMBUS OZEE (license, Ill.): for thirty-five years a practitioner of Illinois; died at the home of his brother in Mattoon, November 2, from cerebral hemorrhage, aged 69.

HERBERT GEORGE CHISLETT, M.D., Hahnemann Medical College, Chicago, 1903; of Berwyn, Ill.; died in the Hahnemann Hospital, Chicago, November 22, from pneumonia, aged 44.

GEORGE ANTHONY BYRS, M.D. Rush Medical College 1855; assistant surgeon of the One Hundred and Nineteenth Illinois Volunteer Infantry during the Civil War; died at his home in Clayton, Ill., October 25, from senile debility, aged 81.

HENRY HEIDELBERG, M.D., St. Louis College of Physicians and Surgeons, 1891; member of the American Medical Association; and president of the Monroe County Medical Society; died at his home in Hecker, Ill., July 2, from cirrhosis of the liver, aged 40.

E. H. HAMILL, M.D., for many years medical director of the Prudential Life Insurance Company, died at his home in Chatham, N. J., Oct. 30, aged 66. Dr. Hamill practiced in Jacksonville, Ill., for about five years beginning with 1875, leaving in 1880.

FRANK E. MCGANN, M.D. Barnes Medical College of St. Louis, 1904; a member of the Illinois State Medical Society and coroner of Brown County; and formerly secretary and treasurer of the Brown County Medical Society; died at his home in Mt. Sterling, November 28, from pneumonia, aged 30.

J. G. COX, for sixty years a practitioner of medicine of Jacksonville, Ill., and Humboldt, Neb.; a veteran of the Mexican War; assistant surgeon of the One Hundred and Fiftieth Illinois Volunteer Infantry during the Civil War; died at his home in Humboldt, Neb., July 15, from senile debility, aged 87.

WILLIAM WATSON, M.D., Rush Medical College, 1854; surgeon of the Eleventh Iowa Volunteer Infantry during the Civil War, and for two years surgeon-in-chief of the Military Hospital, Rock Island, Ill.; a practitioner of Dubuque, Iowa, until 1901, and thereafter of River Forest, Ill.; died at the home of his son in that place, November 21, from the effects of a fall, aged 84.



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## ORIGINAL ARTICLES

### BISMUTH PASTE IN THE TREATMENT OF RECTAL FISTULA\*

EMIL G. BECK, M.D.

Surgeon to the North Chicago Hospital  
CHICAGO

The best proof that the treatment of rectal fistula is still imperfect is offered by the statistical reports from various surgical clinics.

Tuttle, for instance, as quoted by Pennington, says: "In 2,196 cases operated on by surgeons in general hospitals, less than 45 per cent. of them were not even claimed to be cured."

Most of us are not aware of this large percentage of failures and in our own practice we are likely to lose track of the percentage in which we have not obtained a cure. Nevertheless, nearly every physician will recall a number of patients in his practice in whom he failed to cure the rectal fistula.

Granted that the percentages of failures quoted by Tuttle is larger than later statistics might prove, it must be admitted that operations for rectal fistula are frequent failures. We meet with cases which have been operated on a number of times without avail. In fact, experience teaches that if the first operation was not successful, the subsequent operations are also likely to fail. The patients dread a rectal operation. They seem to anticipate failure, and fear the possibility of having an incontinence added to their old trouble.

With such a large percentage of failures in the treatment, and with the opposition on the part of the patient to the present methods of treatment of a disease so prevalent and often so distressing, our time will be well employed in making a thorough investigation of this subject and determining why so many cases of rectal fistula are refractory to all forms of treatment.

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\* Read before the Chicago Medical Society, Dec. 21, 1910.

My brother Carl and I have had the opportunity during the past four years of observing and treating a large number of rectal fistulæ with a new method, which has thrown so much light on this dark field of surgery that I feel prepared to assist in explaining the causes of failure.

The method employed consists of the injection of bismuth paste into the fistula and then taking a radiograph. It seems needless for me here to describe in detail this method, inasmuch as most of you are familiar with it. I shall only speak of it with special reference to technic in rectal cases.

The paste, which fills all the recesses of the sinus tract, furnishes a picture of the entire network of undermining channels. Stereoscopic radiographs are so much superior to the single plates because they give a plastic picture and inform us of the relation of the sinus tract to the other structures of the pelvis. My brothers and I have employed the latter method during the past three years almost exclusively, notwithstanding the increase in its cost.

These radiographs explain in most instances the causes of failure.

*The most frequent cause of failure is the incompleteness of the operation*, because the surgeon has had no reliable means of estimating the extent of the fistulous tract previous to the operation. *The probe in this connection is unreliable*. It fails to inform us as to the extent, the direction or the depth of the fistula. The mere fact that the probe when introduced into a fistula is arrested at a certain point is no proof that it has reached its bottom. It may and usually is arrested in some fold or curve of the sinus, whereas a whole labyrinth of sinuses beyond our conception may exist besides the one channel into which the probe was inserted. I illustrate a case in which the passing of a probe indicated that we had to deal with a single straight fistula, and behold, "a turtle-shaped sinus," so different from what we expected revealed itself in the x-ray picture. In our collection of cases radiographed, there are only one or two instances in which a probe could have explored all recesses through the external opening.

The injection of colored fluids for the purpose of staining the walls of the sinuses so that they may be easily traced during the operation is likewise unreliable. In the first place, we cannot study the topography of the sinuses previous to the operation. They may extend into inaccessible regions of the body, and this is not discovered until the patient has been subjected to the operation, and often after he has been on the operating table for an hour or longer. Furthermore, the stained sinuses are often lost track of during the operation by the distortion of the tissues and the bloody discoloration.

It is thus evident that these two diagnostic aids, which formerly were the two most prominent factors in diagnosis, are not quite satisfactory, whereas the use of the injection of the paste and the stereoscopic radiograph will give us so much information as to permit us to carry out our surgical treatment according to a definite plan, with a perfect knowledge of the anatomical distribution of the sinuses.

There are four points which I wish to make:

1. That a correct anatomical diagnosis of rectal fistula before the operation is undertaken is essential and such can be obtained by stereoscopic radiographs of the injected tracts.

2. That many cases of so-called rectal fistula are inoperable because they originate or extend into inaccessible regions, as, for instance, the sacrum, the hip or the spine.

3. That a correct anatomical diagnosis will prevent us from attempting impossibilities and thus save the patients from useless operation.

4. That operable as well as inoperable fistulæ around the anus can be cured by the injection of the bismuth paste.

The last point brings me to the consideration of the treatment of rectal fistula.

After four years' experience in the treatment of these fistulæ with the bismuth paste, we have come to the conclusion that only those cases should be operated on in which the bismuth paste has failed for a definite reason. A thorough trial of this method should precede any operative treatment, because the injection is painless, harmless and in at least 75 per cent. of cases effective.

The therapeutic possibilities of the paste in rectal fistulæ are illustrated in the following case:

Mr. J. P., aged 68 years, developed in 1868 a pararectal abscess. Being a cowboy and living in a rural district where a physician was not within reach, he performed his own surgical operation by plunging a jack-knife into the abscess, with the aid of a mirror. Within one year he had five sinuses around his anus, which discharged pus uninterruptedly for forty years. Although many times advised to undergo an operation, he refused, preferring daily dressing, to which he so accustomed himself that he did not mind their inconvenience.

In June, 1908, I first injected the fistulæ with bismuth paste (Formula I) and found that the five sinuses communicated. To my surprise, the discharge ceased after this first injection, and one month later all sinuses were closed, and have remained so.

The literature contains many scattered reports of cases of rectal fistula treated with the bismuth paste, and the average results have been satisfactory. Failures in treatment could in nearly all cases referred to me be accounted for in two ways, first, faulty technique; second, incorrect diagnosis.

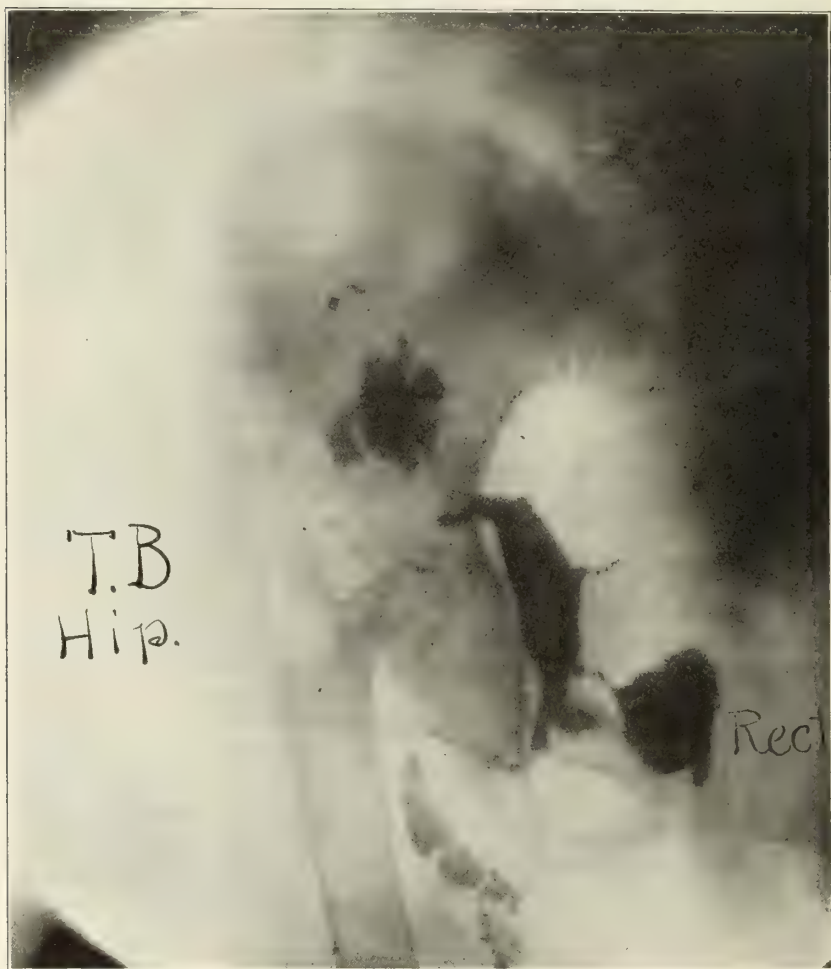
The only special report on rectal cases is that of Pennington, who tested the method shortly after he saw my cases, brought before the Chicago Medical Society in January, 1908. His report relates to 17 cases which he treated by the bismuth paste, some of which had been previously treated by other methods. After a period of four months he obtained a cure in 14 of the 17 cases (76.8 per cent.).

#### TECHNIQUE IN RECTAL FISTULÆ

The patient should be placed in the knee-chest position, and the opening cleansed with alcohol. A metal syringe, filled with the paste, is then immersed in hot water so as to keep it liquid. The tip of the nozzle is placed against the opening and with steady, gentle pressure the paste is injected into the sinuses until the patient feels some pressure. No



*force should be used.* In order to ascertain whether the external sinus communicates with the rectum, the finger should be introduced, and if it shows traces of the paste we may conclude that we are dealing with a complete fistula. Should this be the case, then the treatment will be somewhat difficult. It is then necessary to occlude the internal opening of the fistula with the finger while the paste is being injected through



Rectal fistula originating from hip-joint disease. Note narrow channel into rectal abscess.

the external opening. Thus the escape of the paste into the rectum is prevented and forced into the other direction, where it will fill other existing channels. At times it becomes necessary to employ a rectoscope, in order to inject the fistula through the opening within the rectum. For this purpose the long nozzle of the metal syringe is used. This must be kept warm, so that the paste may not solidify and clog the

narrow channel. When the fistula has a very small opening and is in the puckering folds of the anus, the spear-shaped tip is to be inserted while an assistant stretches the folds and the injection is made.

After the injection is completed, a T-bandage is applied and the dressing changed daily. If, after one week, the discharge continues to be purulent, the fistula should be reinjected. If the secretion becomes serous, it should not be reinjected, as it will usually close within a short period.

The following case is typical of those in which incorrect diagnosis led to futile operations:

*Rectal Fistula Originating in the Pelvis.*—The patient, a lady, aged 30 years, has since 1900 undergone six operations for rectal fistula, all of which failed to stop the profuse and irritating pus discharge. The last operation was very extensive and produced incontinence of feces. In this condition the patient came to me in January, 1908, when I made the first bismuth paste injection. A radiogram disclosed that the fistula had its origin high up in the pelvis. Several sinuses as high as the sacral prominence are plainly shown, the early discovery of which could have saved the patient the six operations and nine years of invalidism. This fact was corroborated further by the most satisfactory result obtained from the bismuth paste injections. It required three months' treatment, but the sinuses healed. The sinus openings were intrarectal; the large gaping rectal opening permitted their being easily reached and injected. A year after the cessation of discharge a plastic operation for the incontinence was tried, but was only partially successful. Patient gained 32 pounds.

#### RECTAL FISTULA ORIGINATING IN TUBERCULOUS HIP JOINT.

A young lady, aged 17 years, developed a typical hip joint disease two years ago. After extensive destruction of the joint and shortening, two abscesses formed and one opened above Poupart's ligament, the other on the anterior aspect of the thigh. She complained also of intrapelvic pain, constipation and pain during urination. An examination of the rectum revealed an abscess high up in the rectum. Compressing the abscess would cause the escape of pus through both sinuses in her groin. The radiograph (Fig. 1) gives a very graphic picture of the abscess formation in the vicinity of the rectum. The abscess ruptured spontaneously into the rectum about three weeks later, and resulted in an intrarectal fistula. Here, then, is a fistula opening into the rectum, which in the true sense is not a fistula; it is a sinus from a tuberculous hip joint, and its cure can be accomplished only by curing the focus in the hip joint and not by rectal operation.

Examples such as the one cited above must guard us against assuming that every suppurating sinus near the rectum is necessarily a rectal fistula.

We must bear the fact in mind that a fistula is nothing more than a shriveled old abscess cavity, and not, as is often supposed, a channel formed by an ulcerative process from the surface, burrowing into the depth of the tissues. At times the abscess is multilocular and will undermine a large area in the perineum, and thus an irregular network of fistulous tracts may surround the rectum, and form a number of sinus openings around the anus.

I trust that these few examples, to which many others quite as instructive and convincing might be added, will help us in applying this painless, simple and effective treatment, which involves no anesthetic and

permits the patient to continue his customary duties, and to reserve the operative treatment for those cases only in which the operation itself seems the only means of relief.

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## A CLINICAL SERVICE IN OUR STATE HOSPITALS \*

FRANK P. NORBURY, M.D.

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The object of a clinical service in all hospitals is primarily for the treatment and care of individuals afflicted with disease. The method of organization of this service is dependent on the class of diseases to be treated and the funds available wherewith the necessary facilities, corps of employees and other important features of the organization may be secured. The details of this organization, in order to produce the greatest efficiency, must needs be systematically developed, keeping ever in view, as I again say, the welfare of the patient. That organization which, in its utilitarian values, provides the best equipment in modern appliances and facilities; which seeks the best help to supervise and execute the demands of the service, which gives the most intelligent medical direction and imparts inspiration, education and practical value to the service, will best fulfil the mission of the modern hospital, whatever may be the class of cases treated therein.

To attain an efficiency just intimated would be nearing an ideal seldom if ever within the possibility of consummation even in our state service for the reason that the frailties of human kind, noticeable in the stuff from which we mould our ideal employees, rarely measures up to our desires, our hopes, our aspirations. Be the plant ever so modern or the finances always dependable and adequate, there yet remains that part of the equation with which we have to reckon, which may make or break the success of service in any hospital, namely, the human factor. This powerful disturber of peace and efficiency in personal service, with its traditional inertia and other intensely human traits, is not infrequently the problem of problems to perplex and disturb the organization of any clinical service; problems not presented in the abstract of books, but in the living concrete realities of daily experience; problems not limited to the minor employees in the service, but accompanying and becoming a part of the medical and nursing staff, yes and even reflecting itself in the person of the superintendent himself. We are all human, and perhaps the less we say of our faults the better. Perhaps we had better be blind to them, except when they do interfere with the service, and then let us speak with authority, not even omitting our own shortcomings and inadequacies as a part of the complete equation.

To overcome the potential possibilities of the personal handicap which is a living reality in all hospitals, we must endeavor to cultivate

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the true spirit of service—this, by precept, example, appeal, the educational values of comparisons, and excursions into the realms of the ideal. The spirit of service which inculcates an ideal to-day, to-morrow and all time, will in its living reality discharge the duty which lies next, even though the toil be intense and prolonged, because the compensation is in the accomplishment of the service and the consciousness of growing power and worth in duties nobly met and work thoroughly done.

Again, we need to develop in a clinical service the true spirit of professionalism in the medical staff, the nursing corps. The modern hospital with its equipment and organization is representative of the professional age in which we live and, as such, should be in touch with the true professional spirit. It has been said that it is difficult to maintain, much less create a professional spirit in our state hospital service: that this is due to the isolation of the medical members of the service, and to the intensity of the routine which is their lot in the average hospital for the insane. My answer to this is, that it is not necessary that the members of the staff be isolated from professional colleagues, nor should the fact that they are spokes in the professional wheel, which revolves every day, make them routinists. While I know the routine duties of the service take time, they should; and no physician on the staff has a right to have any greater ambition than to do each day's work well.

Let this work be the criterion of his merit—"not to see what lies dimly at a distance, but to do what lies clearly at hand." This is the true professional spirit, and the faithfulness in small things should implant an intellectual impetus for mental promotion, thus leading to well formed habits of professional service. This implies that the physician will throughout his career preserve a receptive attitude of mind that will enable him to combat with all his strength the fatal tendency to become stereotyped. This tendency we know is partially temperamental; partially the result of his self-induced isolation and acquired intellectual inertia; but whatever it is, it is fatal to the development of clinical service in our institutions. I must insist that from the superintendent to the intern; from the chief nurse to the novitiate in the training school, there must be guarded effort to keep the mind plastic, and at all times be ready to receive, at whatever cost to old and cherished beliefs, the new facts, the new ideas, methods and manners of treatment and of service, which progress has established as worthy of consideration. "Wrong convictions like out-of-date guns are a source of danger and must be relegated to the mental scrap heap." True professionalism develops, conserves and utilizes the best endeavors of every true physician and nurse. It carries with it the gospel of loyalty to the service, loyalty to truth, and is a stimulating example to the subordinates attached, in other positions, to the service.

The foregoing preamble emphasizes the fact that it takes more than equipment and facilities to create and develop a clinical service: it takes men and women imbued with the power to live deeply, even in the atmosphere where disease is repulsive to many healthy natures. Mabie tells us "we never accustom ourselves to disease, and we never cease to resent it as

the intrusion of a foreign element into the normal development of life and an interference with the free play of its forces." In the treatment of mental diseases, too frequently, this deflection from the normal line, where the individual in his reactions fails to reach trustworthy conclusions, its effects are of painful interest to all concerned. So much in fact is painful in mental diseases that to interpret aright and to let skill in observation be not the only incentive which actuates men and women to study these cases, we must inculcate veracity of ideas, breadth of understanding of social conditions which have figured in the causation of disease, and thereby develop the sentiments through the accumulation of experience, rather than to have them blunted or blotted out by contact with these unfortunate ones. The growth of sentiment is, as McDougall says, "of the utmost importance for the character and conduct of the individuals, and of societies: it is the organism of the affective and conative of life." By it we estimate value, merit, moral principles, and are able to inculcate self respect, without which we cannot entertain respect for others. This factor enters into the clinical service of an institution, the sentiments as expressed in the spirit of professional and personal service rendered by physician and nurse.

The question of the patient's stay in the hospital as being productive of good rather than evil may, in fact has in my experience, turned upon that factor as to whether her stay is an added blessing or an added horror, governed by the presence or absence of true sentiment expressed in the service rendered the patient alike by physician and nurse. I speak feelingly on this question because it is not impossible in my experience to have clinical service shattered or deformed at least by an intrusive belief on the part of physician and nurse that the patient is an interloper, an intruder on the ward, a usurper of the rights and privileges of the nurses' valuable time, and disturbs the physician's cogitations, perhaps on the novels of Guy de Maupassant. What we want is not an incarnate tragedy in the coming of the patient to the hospital, but the control of the situation by a native or acquired tender heart surcharged with the belief in individual service—a cultivated service which is an art, a professional art—a true vocation. Osler said: "There is no higher mission in this life than nursing God's poor." I believe we can paraphrase it and say "God's mentally afflicted." In so doing one may not reach the ideals of one's soul, but we can go far to satiate the longings of the heart to be of service in this field of medicine.

Perhaps I have indulged in a preachment in this prelude to the development of clinical service; if I have, it is because I believe that the criticisms and faults concerning the efficiency in state hospitals, in the past and of the present, can be traced to the lack of spirit of the service as well as to the maladjustments in the more direct scientific service.

We all know that with the Psychopathic Institute as the nucleus, of which Dr. Read has addressed you, there is slowly being evolved a scientific service comparable with a like service in any other state in the union. But, let it be said, the Psychopathic Institute cannot do it all. It can show the way to the young physician anxious and willing to learn, but

to this potential possibility of service there must be added the increment of cooperation on the part of the several state hospitals; this cooperation to be vested in an organization of a clinical service the machinery of which is to be run by the selected and trained men placed in charge. Now, what constitutes the machinery of such clinical service?

The machinery should be based on a constructive policy—a policy such as prevails in large manufacturing concerns which is willing in the sense of truest economy to break up and throw out the most costly plant if, by so doing, it can be superseded by a more efficient service. In other words, we ought to be economically constructive and should in the true spirit of efficiency of service be willing to do away with old traditional beliefs, old-time tried and fire-tested theories, which bind one in mental prison, and seek to recast our service to have it in keeping with the advancements of to-day. Yes, even more than that, try to make it creative that it may spell originality in service, and thus set a pace for more progress. We must, if we expect to make progress, get away from rooted antipathies, from mental attitudes such as Matthew Arnold called “philistinism,” or else we will find our machinery ineffective and trammelled by faulty traditions.

The machinery of our institutions necessarily is representative of the general principles which have governed the treatment of mental diseases since these institutions have been established, modified, however, from time to time, as new principles have been evolved and time has warranted their adoption in the routine of daily practice. For this reason each institution is handicapped more or less structurally with conditions which, in the light of modern rational treatment, conspire to interfere with the most economical practice of present-day therapeutics.

While it is true there is wide latitude allowed in all treatment and many features of treatment are the same to-day as they have been in the past, that is to say that the fundamental principles on which general treatment of mental disease is founded are practically the same to-day as in the past, yet there is an ever changing routine in the practice of medicine of which psychiatry is a part, due to progress in etiology and clinical pathology, etc, which necessarily changes the rationale of treatment. The old ward system with single rooms and dormitories, at the time of their evolution in the treatment of mental disease was, and is to-day, an evidence of broad common sense rationalism, but modern practice goes further and gives the infirmary wards, the hospital wards with their single rooms, dormitories, etc., in keeping with present day conceptions of treatment.

Facilities for the rest methods of treatment including hydrotherapy as an adjunct are imperative needs of common sense rationalism of to-day, as we better understand the causes of and the indications for treatment of mental diseases. The modern hospital idea has invaded our hospitals for the insane and is changing the modes of structure, considering efficiency as involving more than the building of wards of defined capacity. It means such accessory quarters, buildings, etc., as meet the full demands of service, namely, hospital wards or pavilions for acute



disease, medical and surgical; isolation wards or pavilions specially constructed for the treatment and care of tuberculous patients; buildings for manual arts and crafts training, and such other needs as accumulated experience has dictated. The last but not the least of these in this evolution are quarters for the nurses—the nurses' home, separate and apart from the wards in which they see service; staff houses for the resident medical staff, which are in keeping with the domestic requirements of every home-loving and serviceable staff officer. Much could be said regarding the staff house as a necessary adjunct to a well-organized clinical service, quoting the experience of the medical department of the United States Army, Navy and Marine-Hospital Service, wherein it is shown that permanent efficiency was not attained until provision was made to give the staff members home life and its ordinary domestic comforts.

You may ask what has equipment such as just stated to do with the ultimate purpose of treatment of the patient? My answer is, that all of these hospital units and more, including the engineering, farming, etc., in their sum total make the efficient service. In fact the hospital unit idea is the only plan which does meet the demands of service—these units are part of one whole, and this whole has for its object the treatment and care of the patient. There is not an institution in the service of state care of the insane in Illinois which as yet, in its equipment, measures up to all the demands of the clinical service as we would have it. That is no reason why we should not make the best of what we have and utilize to the limit (thanking God that we have what we have), for the best service possible under the circumstances. I am an optimist as regards the present and future service of our state hospitals in Illinois, in spite of the handicaps which structural deficiencies intrude into organized clinical service. The American Hospital Association in its progressive work has given new ideals to the general hospital service and from this organization our state service could receive much inspiration and encouragement along the lines of structural needs and demands to be in keeping with the modern conceptions of clinical service.

The equipment such as is necessary to meet the demands of clinical service in our state institutions, if not at hand, can be improvised at least sufficient to give adequate service in handling the acutely sick and to extend the full benefits of hospital service to the tuberculous and infirm. The future hospitals in Illinois will profit by the best that is in our present day service which, as is well known, is the outcome of ideas which have already been applied to the service. What is new is but the innovation of preexisting conditions good or bad.

Now, given an equipment, how are we to manage or conduct it as based on the hospital idea? Fortunately the civil service as adopted in Illinois has given an impetus to an improved personnel in the service. Especially is this noticeable in the medical staff where young men are encouraged to enter as interns and through promotional examinations reach the higher grades in the medical service. Thus selected, where a physician's merit rests in his own endeavors, there is an incentive to work at any

cost in order to achieve the full benefits of such service. This incentive to work is based on the fact that the physician must remain a student if he is to keep his knowledge fresh and up to date. The facilities and opportunities for study in the medical service are greater in fact than the physician can avail himself of, by reason of the constant stream of patients seeking admission to our state hospitals. But it is not numbers of patients which count, it is the systematic study of individual cases and the reading of literature pertaining thereto which counts and which is always a possibility to him who is a seeker after knowledge. Some of the most brilliant and constructive work in medicine, as the history of medicine will show, has been done by men under conditions much more restricted, where isolation was a fact and not a fancy. The value of such an experience to the individual is in seeing not much but wisely.

The training which the young physician will receive in the Psychopathic Institute places him in line with the advances being made in clinical inquiry; teaches him correct habits of analysis and, if he has special aptitude, it will give him the opportunity to indulge his ability in original research for which there is much demand to-day in internal medicine, of which, as before stated, psychiatry is a collateral branch. But what we need in addition to the successful laboratory worker, the research scholar in medicine, to develop and give to our service results in treatment, is the bedside practitioner who can reach the hearts of his patients, can solve their individual needs, bring order out of their chaotic state of mind, and give relief not only to the body but the distressed personal self. We must not forget that there is more to the treatment of mental disease than making a diagnosis; that there is more to the treatment than the research work revealed in the laboratory; that there is more in treatment than the prescribing of drugs and physical means of treatment. To all this, which is essential and truly worthy of sedulous consideration, there must be added that knowledge which will make the physician a success in the study of the individual. The laboratory physician and the diagnostician, says Campbell, "too often mistake the means for the end and delude themselves with the belief that they are actually benefiting the patient by subjecting him to an elaborate system of examination." This criticism, I believe, is more apparent than real in our clinical service in the state hospitals, but nevertheless it is true the individual may be lost sight of in the pursuit of an interesting case. Another feature which we must not overlook, and to which Campbell also refers, is that the man most deeply versed in symptomatology, morbid anatomy and pathology, is the one who is apt to make light of treatment. He becomes so saturated with and fascinated by this kind of knowledge that in the end he actually deludes himself into believing that in the mere investigation and record of symptoms he is fulfilling his duty to the patient. No, we must go further; we need in addition to note the individual—study his personality, know of his trials, his woes, his faulty hygiene, his habits and all other social conditions which are as much a part of his disease from the treatment standpoint as the classification to which he is assigned in the staff meeting.

There are new ideals in peace, as Jane Addams has pointed out, and one of them, as I see it or as I want to see it, is the growth of the study of the individual. Now by ideals, do not associate my views with any slovenly or weak sentimentalism nor vapory fancies or corrupting counterfeits for service; I mean the real sentiment, the rational instinct for service, no star gazing or crystal readings, but work. The essence of the ideal, as Mabie says, "is the application of the imagination to realities." In the clinical problems of state hospital service we deal with realities—the greatest of which is the patient himself—and to apply our imagination to the creation of conditions which will benefit him (the individual), his family (as individual units of society) and society itself (the confederation of units) we are dealing with realities, and the ideal is simply applying the rigid realism about us in a rational work-every-day manner. The clinical service is applied idealism, and the height or breadth of this service is measured by the fountain head as vested in the superintendent; his medical staff; his nursing service; his dietary service and its oversight; his housekeeping service, and all other units which collectively are the potential factors for service. The superintendent is the permanent factor in this organization—in him consciously or unconsciously is the element about which must cluster not only the organization of service but its efficiency. The superintendent must bear the responsibility of this service and he will share in its efficiency in proportion to the extent that his mind and heart are in it. He will create enthusiasm, transmit it to his staff and all concerned in the service according to the ripeness or alertness of his spirit of service, the clearness of his insight into the human problems—the human factors—the richness of which is measured by his imagination as shown in his ideals. It will require more than mere cleverness to keep up the tension, to stimulate the conscious vital side of this service, so as to avoid the fatal tendency of stereotypy in our work. I believe if we are not careful we will be like Voltaire "conscious of our efforts, perhaps full of vitality"; but the unconscious side of our natures which leaves its imprint in our service which others read "may become shallow, thin, undeveloped, and by preponderance may overcome our best aims and purposes."

I am conscious of the fact "that no man can give to his skill the highest use of his knowledge, the final touch of individuality," until both the conscious and unconscious evidences of service are incorporated in his personality—that they have become a part of himself. In other words, the most vital parts of ourselves must by self-education, self-unfolding, reflect themselves in our creative work, our character of service. For these and many other reasons, the weight of responsibility of a superintendent's position grows as he by self-education and self-unfolding realizes, in their fulness, his duties. My greatest responsibility I consider is to the patient as an individual. To bring about or rather transmit this realization of responsibility in the organization of clinical service, the superintendent needs cooperation from the assistant superintendent and the staff. It is needless for me to dwell on the attributes of character which spell efficiency in these positions. Only this, that



provincialism, narrowness of interest and lack of creative force will do much toward marring efficiency. Provincialism is the side partner of stereotypy; in fact, they are twins. Provincialism is the substitution of a part for the whole—the acceptance of the local experience, knowledge and standards as possessing the authority of the universal experience, knowledge and standards. I dare say all of you who have had to deal with old traditions, old manners and deep-dyed customs in institution experience will recognize that provincialism is the root of it all. The narrowness of opinion, the isolation from facts as the practice now knows them, and hundreds of other features in institution work, tell you how deeply rooted is provincialism. It rests on the assistant superintendent under our system of organization to bear the brunt of the creeds and rituals which time has created in any institution. To break through them he must assume the attitude of a reformer and show by his larger knowledge that the substitution of a part for the whole is responsible for the lack of efficiency.

The chief nurse comes in to bear the immediate brunt of any reform in the old order of things. Reform never can be final—a new order of things must ensue, and no one way of doing things can forever prevail. Readjustments are necessary and a resurvey of experience imperative from time to time if we expect to progress. For this reason it requires fresh blood; in fact, audacious practitioners in any art, by dint of insistence, by example and precept, to bring about new developments. The chief nurse, whoever she is, will suffer criticism and supervising nurses will find iteration and reiteration necessary to change the order of carrying “the meal sack to the mill.” It requires, I am sure, maturity of experience to bring poise and balance in any service, but that service which is weighted down by provincialism and cob-webbed theories never will declare dividends. Provincialism breeds philistinism, and both breed discord, discontent, disloyalty, low standards, and the final result is the patient is lost in the shuffle and service falters. We need to grow a spirit of breadth of purpose, liberal ideas of service and give educational value to our training of nurses not only in technical knowledge but in the humanities—give the benefit of culture as well as training. This can be done because educational experience comes not through systems, subjects, apparatus, but with applied knowledge through teachers. Emerson said “it makes little difference what you study, but that it is the highest degree important with whom you study.” Text-books give technical knowledge, but contact with the patient teaches life itself. A ward physician and nurse should learn these lessons and get as we got from Faust not only a chapter from life but a great study of human nature, and this knowledge is best obtained in the tragedies which we meet daily in our work.

I have taken too much time already in this desultory talk. My theme, “A Clinical Service,” has allowed me to present this very human side of it, which I have purposely chosen, because I believe each of us needs a review from time to time of this view of service—we need to see more of the life side—more of the patient’s needs as an individual, and

with this background see how we can put a new setting to our ideals of service.

The problems of the clinical service will ever have a great deal to cause worry; the same old jealousies and rivalries among employees (without which the superintendent sometimes would not feel he was on earth); the same old difficulties in internal management found in all institutions; the same old weaknesses with the nursing staff, greater as proportionately the hospital is larger in size; the same old hampering financial problems and at last but not least, the securing and keeping of qualified help in all of the departments, and that nightmare, the cyclic experience of the back-door leak of hospital supplies.

All of these problems and more are features of daily experience of a superintendent, whether he manages a small hospital of twenty beds or one of twenty-seven hundred beds. The clinical service in its direct management, the supervision of its features, are in themselves sufficient to keep one's time employed. To paraphrase Dr. Dewey, "a superintendent should do nothing else than to see that the other fellow does the work." This presupposes that the superintendent by experience and training has the knowledge to know when the other fellow is or is not doing his work. "The world is prone to love wonders; it cares much more for the miracle than for the power which the miracle discloses or the truth which it reveals." The superintendent frequently finds himself in the anguish of being sought after as the magician capable of performing a miracle, rather than a seeker after truth, and trying to enforce simplicity and veracity in the duties of the day. But those of us who have no prophetic powers, no special gifts save those which following the line of duty imparts, recognize that we cannot perform miracles and we have no subordinates who can, excepting now and then we meet among our employees one who illustrates Oliver Goldsmith's saying:

"For e'en though vanquished, he could argue still;  
While words of learnèd length and thundering sound  
Amazed the gazing rustics ranged around;  
And still they gazed, and still the wonder grew  
That one small head could carry all he knew."

I have said enough, excepting perhaps to urge that we give encouragement to young men to enter the medical service; make it worth while, by opportunities for experience, by financial remuneration compatible with securing of high grade serviceable men. We need experienced men to-day in the service to carry out the development of our clinical service. By experience, let me remind you of Osler's saying: "Experience in the true sense of the term does not come to all with years or with increasing opportunities." It is the man who observes carefully and spares no pains, where nothing is thought of as trouble in the search for truth, who profits by experience. We have such men in the service of the state hospitals to-day, and they will grow year by year. Yes, grow not only in mental protoplasm and what will be absorbed thereby, but in tenacity of purpose, in belief in ideals, in truth, in service, and thus "get breadth of view which is the very essence of wisdom." Illinois and the medical profes-

sion need these workers in our state service. Let us encourage them to remain in it because they give of themselves unselfishly to the service that which the great Commonwealth of Illinois needs, a belief in the spirit of true professionalism, which seeks at all times the betterment of the service in which they are enlisted, the care of the sick. Again, the intrinsic value of such service extends the belief in the value of treatment, gives confidence in early treatment of mental diseases and throws about the unfortunate one afflicted with such disorders the sheltering arms of true scientific medicine. To me, the investment of money in the development of a clinical service the machinery of which is in the hands of scientific men devoted not only to their science but their profession and all that implies, will declare dividends in work well done; in lives saved and restored to their homes, their loved ones; in a social awakening as to the causes of mental disease which will bring honor to the state in maintaining a service of such efficiency.

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## LIGATION AND PARTIAL THYROIDECTOMY FOR HYPERTHYROIDISM

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Within the past few years a great deal has been added to our knowledge of the ductless glands, but in none of them are greater changes observed in the structure of the gland itself, or the symptoms more manifest in the individual caused by changes in secretion, than in the diseased thyroid. Data concerning the overactive thyroid has traveled up through a century and a quarter of symptomatology which varied between the heart, the nervous system and intestinal toxins until Möbius presented his theories of hyperthyroidism twenty-five years ago.

Lacking in a pathologic picture for so long a period, the peculiar syndrome of symptoms which marked the condition was naturally designated in its various forms by the name of the author whose views had become best known.

In the peculiar relationship in function of the ductless glands, many symptoms occur which apparently vary within wide limits; thus the results of hyper- or hypo-activity may be mild or severe, transient or permanent.

Diseases of the other ductless glands are less common and rarely cause anything like the marked changes in the general appearance and in the expression of the individual who is affected with hyperthyroidism. Unlike the thyroid they are not hampered by pure symptomatology, and information concerning them was developed from the pathologic side at the onset.

There has been a determined effort by many observers to apply the old titles of the disease to symptoms caused by the overactive thyroid and



to neglect the study of the gland, a practice which very often prevents a recognition of the condition at a period when simple measures might have been employed to cure or to check it.

Hyperthyroidism has been observed and well described for the past 125 years. In the early part of this period, Morgagni, Parry and Flagani carried their observations up to the Graves period (1835). Five years later Basedow revised the work on this subject and in 1858, at the suggestion of Hirsch, this syndrome of symptoms was generally designated "*morbus Basedowii*," a term still commonly employed on the continent.

It may be said, truly, that every case of hyperthyroidism is not a case of Graves' disease or Basedow's disease, i. e., a patient may present all of the symptoms commonly seen except exophthalmos, which may delay applying the term Graves' disease to the case until this missing symptom appears a month or two later. Descriptions of the condition given by Graves and Basedow were undoubtedly based on a number of well marked cases presenting the majority of symptoms common to the condition. Histories well taken, however, will show that many of these cases were not recognized at the beginning as Graves' disease, and that they were treated, perhaps for months, for intestinal toxemia because of the patient's emaciated appearance and serious stomach and bowel disturbances, or they have been treated for endocarditis until the missing symptom, exophthalmos, developed to prove the exact condition. Still another series of histories will show that the goiter did not appear except as a late symptom, and again, it had existed as a simple goiter without symptoms for several years preceding the development of the well-known changes of the condition.

We have, then, different degrees of hyperthyroidism which may furnish grounds for a reasonable discussion as to whether the change may not at times be a physiologic one of a temporary nature, as is seen in changes in the thyroid at certain times, e. g., during menstruation, pregnancy, puberty, etc., due to the intimate association of the gland with the generative organs in the female. While it is apparently essential that an increase of thyroid parenchyma should be shown in well-marked cases of hyperthyroidism, in the milder cases it is not necessary that the microscopic picture should be more marked than such evidence of cell increase, as is seen in the lactating mammary gland.

There are numerous instances where cases of hyperthyroidism have run rapid courses to death, which were essentially due to toxemia. However, the greater number of these cases live through the stage of simple hyperthyroidism, and should they die their death is usually due to secondary changes in the heart, liver and kidneys from the degenerative changes in the gland. Such changes and the results of them are seen even when the gland is in an irregular or constant condition of hyposecretion, secondary to a previously overactive secretion.

The term "exophthalmic goiter" may not even be descriptive of the condition, as in the early stages of the disease some patients may not have goiter, and others may not have exophthalmos, and both of these

symptoms may be absent in rare cases. In fact, of the numerous symptoms by which we identify the disease, there is no one symptom the presence of which is necessary to the making of a correct diagnosis.

There are some forms of myocardial disease which may cause severe symptoms common to hyperthyroidism as well. In certain cases of nephritis there may be symptoms in common, especially widening of the palpebral fissure, or Dalrymple's symptom in Graves' disease.

It is difficult to determine just what is the etiology of hyperthyroidism. Some patients give a good history of severe mental strain or nerve shock, yet this exciting cause might be but a slight factor in upsetting the equilibrium of the nervous system of a patient who up to that time had been neutralizing an excess of secretion from the thyroid. Probably more frequent than any other one cause of this condition is that of infection, with tonsillitis the most frequent antecedent.

Halsted's work on this subject developed the fact that the removal of one lobe in dogs caused an increase in the parenchyma of the remaining lobe resembling that in exophthalmic goiter.

Marine has shown that the withdrawal of or administration of iodine to dogs affected with colloid goiter caused increase or reduction in the size of the growth.

In the microscopic examination of several hundred exophthalmic goiters, Wilson has shown that the history of the individual corresponded to the microscopic changes in the gland in 80 per cent. of the cases. In some of the cases which did not show corresponding changes, it was evident that the section examined did not represent the typical changes of the gland.

From an extensive experience in the examination of thyroids removed in Graves' disease, MacCarty has advanced the reversion theory, i. e., that there is a tendency in the gland of hyperthyroidism to revert toward the simple form of goiter at some period of the disease in practically all cases which are not progressive, and also that such reversions may occur at any period or stage of the disease. Certainly this hypothesis is borne out in practice, as we are constantly seeing patients in whom exophthalmos and a small goiter are the only symptoms left after an attack of hyperthyroidism of the most severe type which occurred many years before. Most of the severe cases of hyperthyroidism give a history in which recurring spells of exacerbation of symptoms are well marked. Under such circumstances it is difficult to accurately gauge the effect of remedial measures, or to say whether such remission, which has occurred repeatedly, is characteristic of the disease or due solely to measures employed in the treatment, or whether they improved in spite of the remedy.

Pathologic findings in ordinary hyperthyroidism is an increase in the parenchyma of the gland, and is shown by an increase in the number of cells lining the alveoli in single or multiple layers, and again by an increase in the number of alveoli.

The pathologic picture of cases of hyperthyroidism which have developed on long standing simple goiters is one of papilloma, mostly invaginations projecting into the lumen of the vesicles. These projections are

covered by new epithelium and constitute the source of the increased secretions. Both of these forms are common and present all the symptoms of the conditions, although the latter form is more commonly associated with the degenerative changes in other organs.

There is another form of hyperthyroidism, unilateral exophthalmic goiter, in which the symptoms may be well marked with the exception of exophthalmos. The eye symptoms are present, i. e., Dalrymple's widening of the palpebral fissure showing more sclera, and Stellwag's sign, staring without widening. In these cases attacks are remittent with periods of exacerbation of a few weeks, and a quiescent period of a few weeks or months. The tumor is unilateral and consists of an encapsulated adenoma which causes irritation and pressure absorption of the nearly normal thyroid surrounding it, when from time to time there is an increase in the growth of the tumor. Such cases would be properly placed with those classified as *pseudo* or *fruste* Graves' disease.

In an examination of a large number of cases of hyperthyroidism (it now numbers over 1,000 operated on), it has become evident to us that there is a condition of increased parenchyma in the thyroid marked by the evidence of hyperthyroidism, and that these symptoms do not necessitate early stages, at least that there should be any serious degenerative lesions of the heart, liver, etc. When such degenerations occur there is usually a preceding or accompanying degeneration of portions of the thyroid gland.

We have two groups of cases of hyperthyroidism. First, the simple goiter without symptoms of hyperthyroidism, and second, the group of cases in which the symptoms of hyperthyroidism constitute the main feature of the case. In cancer of the thyroid it is not uncommon to see marked hyperthyroidism; in fact, some cases have every symptom ordinarily classed as Graves' disease.

*Treatment.*—Admitting the apparent hypothesis that some cases improve with, without, or in spite of treatment, e. g., drugs, mental suggestion, applications external or injected, x-ray and galvanism, injections of boiling water, rest, dietetics, change of climate, operations on the sympathetic nerves, on the blood supply, and on the gland itself: a full list from which we may choose a remedy.

From an operative standpoint we will consider the operation of vessel ligation, and one of partial extirpation of the gland. For the mild cases and those seen early, we recommend the simple ligation of the vessels, nerves, and lymphatics at the upper pole, with a linen ligature. Following this procedure the reduction in the delivery and production of secretion seems to bring about that form of reversion of goiter toward the simple type, as has been demonstrated by MacCarty. The same treatment is indicated in the more advanced cases in which the changes in the heart, liver, etc., have advanced to a most serious degree. In this group the improvement is very marked in all who recover from the operation, and the removal secondarily of the larger lobe and isthmus can be made with a marked degree of safety a few months later. Of the cases operated



on by ligation and who were below weight there is an average gain of 20 pounds in four months.

In order that an operation of any kind may be accomplished with a minimum risk in these cases, it is often necessary to use various methods of preliminary treatment, such as rest, x-ray and medicinal remedies to improve the heart and kidneys, even before the ligation of one pole is attempted. However, the majority of cases may be operated on when they come to the surgeon, by the removal of one lobe and isthmus approximating three-fifths of the gland. The unilateral exophthalmic type is a safe one for extirpation of the offending lobe.

The anesthetic, whether general or local, and whether ether or some other drug is used, depends, possibly, more on the individual likes of the surgeon, the necessities and conveniences of the occasion, than on the condition of the patient. Personally I use cocaine when the signs of degeneration in the heart and liver are so marked that we fear the consequences of ether. All general anesthetics are preceded by one-sixth to one-fourth of a grain of morphia, with 1-120 grain of atropin, given twenty minutes before the operation. Cocain anesthesia is often preceded by scopolamin 1-200 to 1-150 of a grain fifty minutes before the operation.

Disability approximates a few days. The results are about 70 per cent. cured and the remainder greatly improved although operated on at a time when serious and incurable conditions of other organs were present. The mortality for ligation of vessels is 3.1 per cent. The mortality in extirpation cases is 3.9 per cent. This includes the highest mortality of early work. During the past three years twelve cases have died medical deaths (not operated on) within the first eight days after their arrival in the city for operation, their moribund condition being too evident for surgical treatment at that time.

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## VITAL STATISTICS IN ILLINOIS \*

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President Illinois State Board of Health

CHICAGO

*Mr. President and members of the Illinois Society of Engineers and Surveyors:*

I wish to express my appreciation of the honor you have conferred on me in inviting me to address you on the very important topic of vital statistics in Illinois. I am pleased to know that the engineers of this state fully realize and recognize the importance of current vital statistics in their relationship to public health, and that you also recognize the fact that Illinois is deplorably behind the times in not having a satisfactory law for the registration of births and deaths. It also seems appropriate that I should come to southern Illinois to read this paper because of the

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\* Read before the Illinois State Society of Engineers and Surveyors, East St. Louis, Jan. 26, 1911.

fact that the opposition to the enactment and enforcement of an adequate registration law in Illinois has come principally from this part of the state.

For some years a story has been going the rounds concerning the lack of vital statistics in Turkey. It runs something like this:

*Question.*—"What is the death rate in your country (province)?" The Turk answers: "In Damascus it is the will of Allah that all should die. Some die young, some die old."

The second question put to the Turk was: "What is the annual number of births?"

*Answer.*—"God alone can say; I do not know and I hesitate to inquire."

Are we quite consistent in making fun of the Turk, of asking him to cast out the mote from his eye while carrying such a conspicuous beam in our own? Suppose the same question were asked of us. We would be obliged to answer, if we answered truthfully, no one knows. No one knows the exact number of births each year for the country as a whole, or for a single state, or even for a single city, not excepting the city of Washington which is under the direct control of congress. We do not know, and we have, for fifty years, hesitated to inquire, in any way that would bring satisfactory, effective results.

Let us glance briefly at the history of this movement in the United States, its present status, the advantages of registration, and our duty in the matter.

*Historical.*—That vital statistics are the basis on which all state and municipal sanitation rests, was early recognized by the colonies. For example, as early as 1631, Virginia required that ministers and church wardens should report marriages, births and deaths. In 1639, the Colony of Massachusetts adopted registration regulations, and in 1646 the Plymouth Colony followed its example. Some of the municipalities required reports of vital statistics.

The census of the United States was primarily constituted for the purpose of making a decennial enumeration of the population so that the representation of the various states in the lower house of congress might be apportioned properly, the first census being taken in 1790, and at each decennial period since that time "the United States being the first country in the world to provide for a regular periodical enumeration of its inhabitants, an example which has been followed by practically all civilized nations." (Wilbur.)

As a correct enumeration of the population, at sufficiently frequent intervals, is absolutely essential to the proper presentation of vital statistics, the constitutional provision that the people should be counted every ten years may be considered to have laid a part of the foundation of vital statistics, and therefore of preventive medicine in the United States. But it was not sufficient to merely enumerate the population at regular intervals, and at an early date the importance of vital statistics was realized, and an effort made to secure these statistics in connection with the other census inquiries. England began a comprehensive series of "Annual

Reports of the Registrar General of Births, Deaths and Marriages" in 1837, from which period dates the beginning of modern sanitation. Other countries soon followed the example of England with the result that at the present time there is scarcely a civilized nation on the globe but possesses a complete official registry of the vital events of its people, with the exception of the United States. This movement, as I have already stated, had been anticipated by the Colonies and was now felt in the United States. The First Annual Report of the Secretary of the Commonwealth to the Legislature; under the Act of March, 1842, relating to the Registry and Returns of Births, Marriages and Deaths in Massachusetts was published in 1843, and the annual volumes have been continued regularly down to the present time. Other states attempted to follow the example of Massachusetts, New York in 1847, New Jersey in 1848, Connecticut 1848, New Hampshire 1849, Pennsylvania in 1851, Kentucky in 1852.

Beginning with the seventh census in 1850 an effort was made to collect statistics of death through the enumeration of the population, as a part of the general census. This method was unsuccessful in giving reliable results: *vital statistics cannot be obtained by enumeration, but only by immediate registration*. But the plan was pursued at each subsequent census until the thirteenth (1910), when it was abandoned.

We thus see that sixty years ago the movement looking toward the registration of vital statistics in the United States was in a somewhat hopeful condition; but, unfortunately, the results were disappointing, the laws were mostly failures; in some states, as New York for example, total failures. In 1880 the results of the registration of deaths under state and municipal authority were utilized, thus establishing the beginning of the registration area in the United States, this registration area consisting of Massachusetts, New Jersey and the District of Columbia. To this were added certain cities known as registration cities, although they were in non-registration states. This area at that time represented 17 per cent. of the total population of the continental United States.

Of course it is understood by all that the *registration* of births and deaths is a state or a municipal function and is an exercise of the police power, and not under the control of the federal government, because the government of the United States under the limitations of the constitution has no authority to conduct such work directly, all such reports of the census bureau being based on transcripts of state and municipal records, the government conducting the bureau of the census in which a system of decennial enumeration is employed, the bureau compiling the returns made by the states.

The importance of this as a state duty was recognized and voiced by Dr. Elisha Harris at the fifth annual meeting of the American Public Health Association at Chicago in 1877. He said: "Before the national census of 1880 is commenced, all the states ought to have a good system of vital statistics organized and in harmonious operation, contributing comparable and numerically complete results.



"Another decade of neglect to adopt an effectual system of registration in the United States would be greatly to the discredit of the intelligence and public spirit of American citizens."

An epoch-making step in international vital statistics was taken at the International Statistical Institute, which met in Chicago in 1893, when Dr. Jacques Bertillon, as chairman of a committee appointed for that purpose, reported a system of classification of causes of death. This classification was favored by formal resolution of the American Public Health Association in 1897 and adopted in 1898 and a plan proposed for its decennial revision, the first to be made in 1900, under the auspices of the International Congress of Hygiene and Demography. The International Conference of State and Provincial Boards of Health recommended it in 1898 and the International Statistical Institute approved it in 1899.

In August, 1900, the International Revision Commission met in Paris under the auspices of the International Congress of Hygiene and Demography, and in response to an invitation of the French government. Representatives of twenty-six of the leading countries of the world participated in the conference, the United States being represented in it by the Public Health and Marine-Hospital Service.

The classification hitherto known as the Bertillon system of classification and since known as the International System, was adopted by the twenty-six countries sending representatives and by the United States for the bureau of the census and the bureau of labor. It has since been adopted by all the registration states and by all the registration cities in the United States. Its chief advantages are that it is international in scope, provides for decennial revision and because of its adaptability and comparability and, above all, uniformity.

As already stated, two states, Massachusetts, New Jersey and the District of Columbia had laws and returns under them, of such character as to permit their returns of deaths to be accepted by the census bureau, these states, together with certain municipalities constituting the "registration area" at that time, and representing about 17 per cent. of the population of the United States.

The progress from that time on is briefly sketched as follows, in a recent booklet sent out by the census bureau:

For 1890 there were added the states of Connecticut, *Delaware* (not entitled to admission and dropped at the next Census), New Hampshire, New York, Rhode Island, and Vermont, which increased the percentage to 31.4.

For the census year 1900 (ending June 1), there were added Maine and Michigan, raising the percentage to 37.9.

The compilations heretofore were made only for census years, there being no data for the intercensal period. Beginning with the *calendar* year 1900, and since the establishment of the Bureau of the Census upon a permanent basis, there have been regular annual reports (Mortality Statistics, 1900 to 1909) and large additions to the registration area due to the constant efforts made by the Bureau, in cooperation with medical and sanitary organizations and with state authorities.

Indiana was added for the calendar year 1900.

California, Colorado, Maryland, Pennsylvania, and South Dakota were added for 1906; Washington and Wisconsin were added for 1908; and Ohio for 1909.

The aggregate estimated population for the last year was 48,776,893, or 55.3 per cent. of the total estimated population of continental United States. The vast number of 732,538 deaths was returned for the latter year, so that although the United States does not possess a complete system of death registration, it does possess returns of great value from the eighteen registration states, District of Columbia, and 54 registration cities in non-registration states now constituting the registration area.

For 1910 returns were also received from certain states that may prove eligible for admission, namely, Delaware, Minnesota, Montana, Nebraska, North Carolina (municipalities), North Dakota, Oregon, and Utah.

Other states have adopted laws in conformity to the essential principles of successful registration and the model law based thereon, namely, Missouri (in effect February 1, 1910) and Kentucky (in effect January 1, 1911). There is widespread interest in the South, which has heretofore been entirely unrepresented by reliable state registration—to its large sanitary and financial loss, because vague rumors of high mortality can only be confuted by accurate registration of deaths.

The next great forward step was taken when the United States standard certificate of death was adopted, with a corresponding certificate for births. The standard certificate for deaths was adopted in 1902, at a time when no two states and few cities in this country used identical forms for the initial schedule, on which the exact comparability of all subsequent data must depend. The progress of the standard certificate since that time may be seen in the accompanying map. The certificate was thoroughly revised at the meeting of the organized registration officials of the United States, constituting the Section on Vital Statistics of the American Public Health Association, Richmond, 1909, and went into effect on Jan. 1, 1910. It contains provision for the more precise statement of age of infants dying very soon after birth, thus enabling us to make the sharp distinction necessary between stillbirths and deaths of children born alive; the more definite statement of both industry and specific occupation of decedents; and uniform instructions for the proper statement of occupation and cause of death. At the present time this form of certificate is used by a population of 66,892,389. Provision has been made for its decennial revision. The adoption of some reasonably uniform standard form of blank is clearly demanded, because in no other way is it possible to secure the two chief essentials in vital statistics, namely, uniformity and comparability of data.

Before taking up Illinois, let us inquire what are the advantages of an adequate system of registration of vital statistics which would bring us into the registration area. These may be summarized under the following heads: (1) legal, (2) sanitary, (3) social, (4) economic.

*Legal.*—The Committee on Demography and Vital Statistics has declared that “deaths are registered primarily for legal purposes; that is, for the protection of certain rights and privileges of individuals and families. This is the first and most important use of records of deaths, and the sort of utility which appeals most strongly to the general public whenever such records have been long kept.”

In 1902 the American Public Health Association adopted certain resolutions which were brought to the attention of the federal congress

with the result that on Feb. 11, 1903, a joint resolution was adopted declaring that:

WHEREAS, The registration of births and deaths at the time of their occurrence furnishes official record information of much value to individuals; and

WHEREAS, The registration of deaths, with information upon certain points, is essential to the progress of medical and sanitary science in preventing and restricting disease and in devising and applying remedial agencies; and

WHEREAS, All of the principal countries of the civilized world recognize the necessity for such registration and enforce the same by general laws; and

WHEREAS, Registration in the United States is now confined to a few states, as a whole, and the larger cities, under local laws and ordinances which differ widely in their requirements; and

WHEREAS, It is most important that registration should be conducted under laws that will insure a practical uniformity in the character and amount of information available from the records; and

WHEREAS, The American Public Health Association and the United States Census Office are now co-operating in an effort to extend the benefits of registration and to promote its efficiency by indicating the essential requirements of legislative enactments designed to secure the proper registration of all deaths and births and the collection of accurate vital statistics, to be presented to the attention of the legislative authorities in non-registration states, with the suggestion that such legislation be adopted: Now, therefore,

*Resolved by the Senate and House of Representatives of the United States of America in Congress Assembled, That the Senate and House of Representatives of the United States hereby expresses approval of this movement and requests the favorable consideration and action of the state authorities, to the end that the United States may attain a complete and uniform system of registration.*

In passing it may be remarked that the District of Columbia has not adopted the standard certificate, and aside from the Census Bureau having the matter directly in charge, neither the Federal Government nor the Congress have taken a very active interest in the improvement of vital statistics.

1904 Dr. Cressy L. Wilbur, chief statistician, United States census bureau, said:

Pensions or life insurance may depend upon proper evidence of cause of death. The widows and orphans of deceased soldiers must obtain such proofs. Titles and rights to inheritance may be jeopardized by the failure of records. The individual citizen of the state, no matter how humble his position in life, or how insignificant his influence in the affairs of the community, is entitled to have an accurate record made of the important—the vital—events of his life. If the State has undertaken to do this, then the citizen has a right to expect that the state will perform its duty with precision and thoroughness; it is a disgrace to confess default in this important matter, and to admit the failure, year after year, of legislation devised for this purpose.

Governor Hastings of Pennsylvania, in one of his messages to the legislature, declared that:

The need of a suitable system of registration of vital statistics is also being constantly brought to the attention of the health authorities. In an enlightened community there live but few people of mature age whose birth, marriage, or death does not at some time become a matter for the cognizance and consideration of legal authorities. The attainment of majority with its rights and duties, the fact and date of wedlock, the inheritance or conveyance of property, parentage and nationality, place, date, and cause of death, and interment, and many other questions of a sociologic, economic, sanitary, or even historical character often assume much importance with reference to many of our citizens. In the absence



of a state system of registration many of the citizens are deprived of their legal rights or are enabled to deprive their fellows of their legal rights.

Dr. Arthur R. Reynolds, in a public address, alluded to the matter in the following words:

There is hardly a relation of life, from the cradle to the grave, in which the evidence furnished by an accurate registration of births may not prove to be of the greatest value, as, for example, in the matter of descent; in the relations of guardians and wards; in the disabilities of minors; in the administration of estates, the settlement of insurance and pensions, the requirements of foreign countries concerning residence, marriage and legacies; in marriage in our own country, in voting, and in jury and militia service; in the right to admission and practice in the professions and to many public offices; in the enforcement of laws relating to education and to child labor, as well as to various matters in the criminal code—the irresponsibility of children under ten years of age for crime and misdemeanor, the determination of the age of consent, etc. As the country becomes more densely settled and the struggle for existence sharper, many of these matters which have hitherto been of minor significance will take on a deeper meaning and acquire greater importance. Hence the urgent necessity for remedy of the defects which prevent a proper registration of births.

Dr. John S. Fulton, in a paper read at the meeting of the American Public Health Association, also speaks of the direct interest of the individual citizen as follows:

The private interest of the citizen in registration of births is indeed superior to his interest in registration of deaths, for a greater proportion of his privileges and immunities, rights and duties, turning upon the question of his age and his parentage, are definitely conserved by the registration of his birth.

*Sanitary.*—I am inclined to the view that the use of vital statistics for sanitary purposes is not subsidiary to their use for legal purposes. If the health of the people should be the chief concern of statesmen, as has been wisely, and, I think, truly said, and if a correct, efficient system of sanitary bookkeeping serves to increase, as well as demonstrate the value of measures tending to preserve and promote such health, the importance of registration, from a statistical standpoint, is greater than from the standpoint of the mere legal interests of an occasional individual, or the legal interests of the community as a whole.

Mr. W. A. King, former statistician of the Census Office, said:

The greatest utility of registration, as affecting the general public, consists in the availability of the data for tabulation and analysis for study of the agencies affecting health and disease: and, as stated by Dr. Elisha Harris, "The practical relations of well-kept and complete records of mortality to the correct estimation of sanitary experience and prevention of diseases and premature death are so important that sanitary authorities and the wise and effectual application of public health measures demand that the mortality registration shall be both complete and accurate." The statistical treatment of the data also demands that they should be uniform, so that the tabulated results may have their highest value for comparative and analytical purposes.

The Associated Health Authorities and Sanitarians of Pennsylvania, in 1904, adopted a resolution as follows:

*Resolved*, That the achievement of the registration of all births and deaths, with their causes, immediately after their occurrence and the prompt return of certificates from local registrars to the central bureau of vital statistics, thereby giving the sanitary authorities of the state timely information of the exact prevalence and distribution of disease, *is the most important of all sanitary meas-*

*ures, and should unremittingly be urged until successfully carried out in every state in the Union.*

Dr. Arthur Newsholme, author of a standard work on Vital Statistics, says:

The registration of the causes of death has given an immense impetus to sanitary work, and it is scarcely too much to say that modern sanitary science owes its existence to the registration of deaths, and their causes, and the localization of insanitary conditions, thereby insured. . . . And our knowledge of the facts bearing on health and disease has attained a precision never before known.

Dr. John S. Fulton, former Secretary of the Maryland State Board of Health, said:

Public hygiene is built upon, is controlled and directed by, and is in everlasting debt to vital statistics. The might and right to direct the future of preventive medicine, to make and terminate contracts, to approve and reject risks, to test materials and methods, to invest means and distribute profits, these things belong inalienably to vital statistics. Every wheel that turns in the service of public health must be belted to this shaft, otherwise preventive medicine must remain invertebrate and unable to realize the profits available from the magnificent offerings of collateral science.

If the unborn historian of hygiene of the twentieth century shall find one anomaly more curious than any other, it will be that the twentieth century, opening with prodigious resources, immediately available, ran a third of its course before these resources became so standardized that each unit of power might be accounted for in a definite scheme of vital statistics.

The sanitary engineer is confronted with insuperable obstacles when he attempts to obtain exact information in regard to the mortality from typhoid fever in Illinois, or even in the United States as a whole. This is alluded to by Whipple in his work on Typhoid Fever (p. xi), where he says:

The sanitary engineer, with his genius for mathematics and statistics, studies communities at large. The sanitary engineer therefore needs accurate mortality statistics. His recommendations for sanitary improvement must depend upon his knowledge of the local conditions, *and his work will be tested and compared with the results obtained by other sanitary engineers by means of mortality statistics—which may be worthless and misleading unless they are absolutely complete or at least very nearly so.*

Dr. J. N. Hurty, Secretary of the Indiana State Board of Health, says that:

*The accurate collection, tabulation, and analysis of records of births, still-births, deaths, marriages, divorces and sickness may be said to constitute the bookkeeping of humanity. It is fundamental to the practical application of hygiene, to secure higher efficiency, longer duration of life, and fuller measure of happiness. Every pedigreed calf, colt, dog, rooster, ram or even cat, has its birth and death recorded.*

A human being born in the image of his maker, endowed with an immortal soul, and who, according to the Constitution is endowed with "life, liberty and the pursuit of happiness," may be born, and die, without any public record, and frequently no private record of the fact. Prevention of disease, the highest form of scientific medicine, and the foundation of it, is vital statistics.

Surgeon George B. Young, of the United States Public Health and Marine-Hospital Service, says:

Vital statistics are the foundation of scientific public health work, which cannot begin without access to compilation of vital statistics.

*Social.*—Although practically all registration laws now in force in this country were due to the disinterested efforts of the medical profession, we must clearly recognize that this is not a doctor's problem and should not be left to them, any more than we should leave all questions relating to the public school system to the school teachers, or the question of agriculture to the farmer. It is the concern, not alone of the public health officer, the lawyer, the engineer, but a great social question. As Dr. W. H. Allen, of Pennsylvania, has so well said:

Whatever hurries or retards marriages, increases or decreases the number of births, or throws light on the causes of sickness and death, should be found numerically treated in the reports of local and state health authorities.

The object in gathering these social facts for analysis is not to furnish material for future historians; they are the facts collected with a view to *improving social vitality*, to raising the standard of life, and to eliminating permanently those forces known to be destructive to health. And again: The greatest service of vital statistics is their *educational influence*. Health officers cannot rise far above the standard of culture of those who provide the funds for administering the law. The tax paying public must have a belief in the economy and necessity of sanitation. Power and funds must come from town councils and state legislatures. To convince and move these keepers of the purse, reliable vital statistics are indispensable. The *socialization* of information always follows its dissemination.

Wherever vital statistics are wanting, sanitary administration is defective. Wherever they are complete, sanitary administration is efficient. Defective vital statistics and low ideals of cleanliness go hand in hand.

What do we know of infant mortality and of the value of instituted reforms for its prevention when not a single state or city in the United States has the data for a correct statement. We thus see that this is a great social problem which concerns not alone the physician, the sanitarian, the lawyer, the engineer, but every citizen of our great commonwealth and the benefits will accrue, not to the members of these professions, but to the people themselves.

For example, every black dot on the city or state map, marking the location of a baby funeral, would likely lead to the homes of the poor and might lead to the discovery of insanitary homes, improper milk supply, abundant flies, ignorance, poverty. The problem of social disease and our responsibility to it, is perhaps best appreciated when we see its effects and read its lessons in the death of one of these little ones. It would enable us to ascertain what percentage of births are attended by midwives, and a study could be made of the families, the financial condition, the question of how many of them cannot afford even the very moderate fee of a physician, the value and efficiency of infant welfare work, and would be of inestimable value to the Association for the Study and Prevention of Infant Mortality. Infant mortality, infant feeding, housing, milk supply, the midwives question, surely here are important social problems of tremendous importance, all having a definite relationship to, and being dependent upon correct vital statistics.



*Births.—So much for deaths.* The Turk said, in regard to the number of births in his country, "God alone can say; I don't know, and I hesitate to inquire." *After sixty years of effort, we must admit that we have no complete registration of births for even a single state, or even a single city in the United States; that we have only fairly accurate mortality statistics for the states above enumerated, representing 53.3 per cent. of total population, and that we have no reliable statistics of infant mortality in the United States, and that the United States as a whole, is not represented in International Vital Statistics.* In this regard we rank with China and Turkey.

In qualification of the above I might add that at the Fourth Annual Meeting of Life Insurance Presidents, held in Chicago December 10, 1910, Dr. Cressy L. Wilbur said:

The same efforts should be made in all states that do not now possess satisfactory registration of deaths; or in which practically no systematic effort is made to enforce the laws for the registration of births, and this means all of them with the exception of Pennsylvania, Ohio and Missouri, where the state registrars, acting under the model laws, are meeting with success in the first determined efforts ever made in the United States to enforce thorough registration of births on a state-wide basis and under state law. Pennsylvania is the pioneer in this respect, and states that have been content to neglect their duties for many years are awakening to the necessity of more efficient administration. To show the growing interest in this matter I may quote the first recommendation adopted by the Advisory Board recently appointed by Commissioner Lederle to consider the vital statistics of New York City, to the effect that:

The most important improvement which it is now ready to urge is—the adoption of the following means for securing the thorough registration of all births:

1. Verification of the birth registration of every infant dying under one year of age in order to detect omissions.

2. Strict enforcement of the law providing a penalty for an omission to record a birth in every case thus brought to light.

Concerning this question, and its importance, permit me to quote at length from a recent paper by Dr. F. D. Beagle, Director, Bureau of Vital Statistics, New York State Department of Health. He says:

It seems impossible to impress upon the medical profession the necessity for making returns of births, many physicians apparently thinking that such returns serve no useful purpose and have but little significance outside of the family in which the birth occurs.

The state aims, primarily, to protect the personal and legal rights of its citizens by establishing accurate records of births which can be relied upon to prove the important facts contained therein—facts which may frequently be insusceptible of any other proof. The claims of descent, proofs necessary for the inheritance of property, especially from foreign countries, the establishment of school age, age for lawful employment of children, age of consent, voting age, and many other requirements, can be drawn only from accurate birth records made at the time of birth or immediately after. Early notifications of birth are essential for the prevention of diseases, and the total number of births in a state or city is the basis of that most important ratio known as infant mortality. The full measure of protection to infant life cannot be extended unless all births are promptly registered, and all the vital statistics of the state are vitiated by the neglect or failure of physicians and midwives to obey reasonable laws for this purpose.

It is true, and must always be remembered, that the chief agency heretofore available to secure the enactment of vital statistics legislation has been the organized medical profession. Registration of vital statistics is medical work, and medical men have pleaded before legislatures for better laws for this purpose and have greatly aided in their administration. But when it comes to actual reporting of births, under laws of their own devising, the physicians of the country have been most delinquent.

#### ILLINOIS

*Historical.*—The history of vital statistics legislation in Illinois is both interesting and instructive. The act to create and establish a State Board of Health for the State of Illinois, approved May 28, 1877, provided for the registration of births and deaths. It became the duty of physicians and accoucheurs to report to the county clerk all births and deaths, coming under their supervision, with a certificate as to the cause of death and such relative facts as the State Board of Health might require in the blank form to be furnished by the Board. This act was a dead letter at all times in its application to reports of births, and was very laxly enforced in the matter of reports of deaths.

In their annual report to the Governor in 1900, the Illinois State Board of Health recommended the enactment of a law forbidding the interment or cremation of a dead body without a permit from some legally constituted authority; in other words, a law with a compulsory burial permit feature.

Governor Tanner, in his biennial message to the General Assembly in 1901, approved the recommendation of the State Board of Health. Accordingly, a bill providing for the registration of births and deaths, embodying a compulsory burial permit feature, was prepared by the Secretary of the State Board of Health and was introduced in the Senate by Hon. Pleasant P. T. Chapman of Vienna. After encountering some opposition, the bill finally became a law, and went into effect January 1, 1902. The law worked fairly satisfactorily during 1902, although it speedily became apparent to the State Board of Health that all reports of deaths were not being made and the law was not being enforced, especially in counties not under township organization. It was in these counties that the most formidable opposition to the enforcement of the law was found.

In February, 1903, bills were introduced in both the Senate and the House, in the former by the late Senator Burnett, and in the House by the speaker, Mr. Miller, repealing in its entirety the birth and death law of 1901. Further efforts were made by the Board, through its secretary, to prevent the repeal of the law. Finding that it was impossible to do this, the secretary made inquiries as to the nature of a bill that would be acceptable to the general assembly, and was informed that any bill that would eliminate the compulsory burial permit feature in rural districts would be assured of passage. The secretary, thereupon, drew up a bill which passed the house and senate without opposition or amendment, and is now the present law providing for the registration of births and deaths.

While this bill of 1903 was under consideration, the legislative committee of the Illinois State Medical Society, through its chairman, made inquiry into the matter and on February 28, 1903, Dr. Black wrote the secretary as follows, after stating that a member of the committee had had a long interview with Mr. Miller regarding the matter:

"We think that while it is somewhat of a loss to have the bill divested of the burial permit feature, that it will be the best policy, under the circumstances.

"From the standpoint of vital statistics, if there is a sufficient penalty attached for non-compliance on the part of physicians, it will be all right.

"There seems little doubt that all the opposition of the law emanates from the southern part of the state. I think the members of the legislature are unduly exercised on account of the fate of a candidate for congress in the southern part of the state, whose defeat is largely attributed to his having voted for this birth and death bill."

Here it might be pertinently stated that the candidate referred to by Dr. Black was Hon. Pleasant P. T. Chapman of Vienna, who introduced the bill of 1901.

No further attention was given to the matter by the legislative committee of the Illinois State Medical Society, although it was stated in the ILLINOIS MEDICAL JOURNAL for March, 1903, that "the friends of the law are willing to have the amendments made making it less burdensome, but all steadfastly oppose any more radical change."

The legislative committee was chiefly concerned in an attempt to secure the passage of a bill providing for a State Board of Medical Examiners, and no further attention was paid to the efforts made to repeal the law of 1901 or to institute retaliatory measures against the State Board of Health for its too active participation in an endeavor to prevent the repeal of the law.

It may be of interest that Hon. H. R. Fowler, who was a member of the senate of the Forty-third General Assembly, 1903, and who took such an active part in the repeal of the birth and death act of 1901, has just defeated Hon. Pleasant P. T. Chapman for Congress. It has been said that the bill of 1901 was made an issue, even in this campaign.

The law has many good features, but the fact that it is emasculated by the elimination of the compulsory burial permit feature and that the State Board of Health does not receive reports of all deaths, leaves Illinois out of the Registration Area. Notwithstanding the fact that in 1909, 62,867 deaths and 80,000 births were reported to the State Board of Health. This is a splendid showing under an unsatisfactory law and has been accomplished by the untiring energy of the Secretary, together with the co-operation of some of the physicians of the state. That the Board does not receive a report of practically *all* deaths and a much larger proportion of births, is due largely, to the negligence and indifference of physicians. It was a compromise measure, it was this or nothing, but it was the best that we could do at the time. Meanwhile other states were busy, other agencies were becoming interested and active, and the Census Bureau, especially through the Chief Statistician,



Dr. Cressy L. Wilbur, was carrying on a much needed aggressive campaign of education, and in co-operation with the other agencies spoken of, especially the vital statistics section of the American Public Health Association, the legislative committee of the American Medical Association drew up a model Births and Deaths Law, with modifications to suit the different local conditions, and urged its passage by states not in the registration area.

In 1909 a bill was introduced in both the Senate and the House, but failed of passage, owing to the opposition from legislators, especially of those from the southern part of the state.

In order to do all in our power to secure for Illinois this much needed law, on December 9, 1910, a conference was held at the office of the President of the State Board of Health at Chicago. This conference was attended by Dr. Cressy L. Wilbur, Chief Statistician of the Census Bureau, Dr. Wm. A. Evans, Commissioner of Health, Chicago, Dr. M. O. Heckard, of the same department, Dr. F. R. Green, from the American Medical Association, Mr. E. R. Wright, President of the State Federation of Labor, Prof. Chas. R. Henderson, of Chicago University and representing the Society for the Study and Prevention of Infant Mortality, and the President of the State Board of Health. Dr. Geo. W. Webster was elected Chairman, and Dr. Chas. J. Whalen secretary of the committee.

A resolution was adopted, appointing a subcommittee which was instructed to invite the co-operation of the Bar Association and to "draft a bill regulating the Registration of Births and Deaths in Illinois, such draft to formulate the essential features of the Model Law approved by the American Medical Association, and the United States Census Bureau, and to report back to the committee."

Such a bill has been drawn up by the committee and will be introduced at the present session of the General Assembly. Such a law is recommended by Governor Deneen in his biennial message, read in the Senate January, 1911.

It has been urged that owing to the sparsely settled condition of parts of Illinois, the enforcement of such a law is not practicable. It is not necessary here to go to Japan or Chili or Finland or Ceylon to make comparisons. Just across the border to the east of us in Indiana and Michigan, and across the river in Missouri, such laws are in satisfactory, successful operation.

Half of the states in the registration area have fewer persons per square mile than Illinois.

#### CONCLUSION

It is the duty of the State of Illinois to see to it that at least the three principal events in the life of each of its citizens be made a matter of public record. These three principal events are birth, marriage and death. Illinois has spent forty millions of dollars on a Sanitary Canal, largely for the purpose of improving the water supply of some of her cities and chiefly for the purpose of diminishing the deaths from typhoid fever. To what extent has the typhoid death rate of the state as a whole

been affected? Nobody knows. We do know that in the city of Chicago, having accurate, complete death reports, that the death rate from typhoid diminished from 173 in 100,000 in 1891 to 15.6 per 100,000 in 1908.

Owing to the lack of an adequate system of sanitary book keeping, we don't know the actual annual death rate in the state, from typhoid fever, or any other disease, either before the canal was opened, or afterward.

What would you think of the business sagacity of a corporation that would spend forty millions of dollars on some improvement and then fail to keep a set of books that would enable it to know whether it was a paying investment or not?

For several years the State Board of Health has been engaged in a State wide antituberculosis crusade. And with what result? Nobody knows. We do not know the exact death rate from this disease and consequently are not in a position to correctly estimate the value of any or of all the methods instituted for its suppression.

The State Geologic Survey and the State Water Survey have done a splendid service for the State in showing the need of a better water supply and how to obtain it. What effect has it had upon the typhoid or other mortality? Nobody knows.

In Illinois the birth or the death of a blooded horse or a Jersey bull is at once recorded in a herd book, but the people of southern Illinois, through the voice of their chosen representatives, have gone on record as saying that it is too much trouble to obtain legal permission to bury their dead or to make a legal record of the event, and, consequently, in this state, outside of cities having ordinances with a compulsory burial permit feature, a human being may be placed underground without the slightest legal note or record. What a disgrace to our state that we should be found holding open the door for graveyard insurance. When a human being can pass, or *be sent* from this world to the next, without a single formality, inquiry into or record of the cause of the death, and the body buried like a dog, it is time we enacted and enforced a suitable law, if for no other reason, as a deterrent of crime.

*The purpose* of this movement for the extension of the registration area is to increase the number of registration states until the entire United States shall be represented by satisfactory, accurate, complete returns of births and deaths, and American Vital Statistics shall be entitled to rank with those of other civilized nations of the world.

*The time* is opportune. On this point Dr. Cressy L. Wilbur says: "There has never been greater harmony or a more sincere desire for helpful co-operation between the federal, state, and municipal registration offices, nor a more happy prospect for the coming of the time when vital statistics shall be recognized, in fact as well as in theory, as the absolutely necessary foundation of modern scientific public health service."

Illinois should not be slow to assume among the other registration states that station to which she is entitled by virtue of her geographical situation, her commercial, intellectual and public health supremacy.

Good laws are the expression of an enlightened public sentiment enacted for the protection of society as a whole, and not for any class, and another failure to enact a satisfactory births and deaths law in

Illinois will be greatly to the discredit of the intelligence and public spirit of the people of the state.

It is time that Illinois ceases to allow politics to interfere with her duties, and with the business sagacity, foresight, common sense and patriotism which have characterized her legislative acts in the past, enact and enforce such a Vital Statistics Law, which will, I am sure, ultimately pay immense dividends as a part of the State Public Health Service.

Practical success in our neighboring states has pointed the way, and we should not be slow to follow it. Let us emulate the example of Pennsylvania, a state having one of the poorest registration laws in the United States in 1905, and now, one of the best.

*Finally.*—For sanitary, legal, social, economic reasons, Illinois should prepare and enact, and then enforce, such a births and deaths law as will enable her to take her proper place among, not only foreign countries, but her immediate neighbors in the Registration Area, to the end that sanitary science be advanced, preventive medicine be improved, the legal rights of every citizen be better protected, a proper foundation be laid for the working out of many social problems of vital importance, the health of every citizen be better protected and life prolonged.

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## THE MATAS OPERATION FOR THE CURE OF ANEURYSM, WITH REPORT OF TWO CASES OF POP- LITEAL ANEURYSM \*

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CHICAGO

Mr. President and Members: The radical cure of aneurysm by the method described by Prof. Rudolph Matas in 1902 differs essentially from the old operation of Antyllus and former operations for the cure of aneurysm, by reason of the fact that Matas does not disturb or extirpate the sac except in so far as it may be necessary to open it by a free incision to evacuate its contents and freely expose its interior for the purpose of suturing the arterial orifices found within the sac, and to obliterate the sac by infolding and suturing its walls by superimposed layers, inverting the attached overlying skin with the sac walls and suturing the flaps thus formed to the bottom of the cavity so that no dead spaces are left and no complications are likely to arise as the sac is subjected to the minimum amount of disturbance, and no drainage is used or required.

The method is "applicable to all aneurysms in which there is a distinct sac and in which the cardiac end of the main artery can be provi-

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\* Read before the Chicago Medical Society, Nov. 2, 1910.



sionally controlled. It is especially applicable to all forms of peripheral aneurysms of the larger arterial trunks (carotid, axillary, brachial, iliac, femoral and popliteal)."

The principles which underlie the technic of the Matas operation are very simple and are based on well established histologic and pathologic data. The essential feature of his operation is that the aneurysmal sac is regarded as a diverticulum or prolongation of the parent artery with which it is connected, and that the lining membrane of the sac is a continuation or expansion of the endothelial intima lining the artery. In other words, the sac when fully formed is the analogue of serous cavities elsewhere both in a histologic and embryologic sense, and from a surgical point of view to be treated as other serous cavities. The fibrous adventitia and endothelial intima are continued as expansions of the pre-existing coats of the parent artery, so that for surgical purposes the sac, whether of traumatic or pathologic origin, can be regarded as a prolongation or expansion of the affected vessel.

The technic of the operation is as follows: hemostasis is secured in the ordinary method by the elevation of the limb and the application of the Esmarch elastic constrictor when the affected artery is situated in an extremity; when located in the neck or in a location inaccessible to the application of an Esmarch constrictor, pressure may be applied over the exposed artery by a Crile artery compressor or with a traction loop passed under the artery and held by an assistant, or the artery may be controlled by direct pressure with a suitable padded forcep. The sac is exposed by a long, free incision parallel to the long axis of the aneurysm, and by a careful dissection all important structures that might overlie its superficial surface are identified and pushed to one side until the sac is reached and recognized, when it is opened and evacuated of its contents, blood clots or organized lymph. After emptying and cleansing the sac carefully, search is made to discover any collateral branches or openings aside from the entrance and exit of the parent vessel. The interior of the sac is thoroughly but gently rubbed with sterile gauze to clear it of laminated blood clots, and this irritation by rubbing or abrasions causes it to unite more quickly when sutured. The suture material used may be either silk or chromicized catgut or fine kangaroo tendon. I give preference to chromicized catgut Nos. 2 and 3 introduced into a round full curved needle with a long eye similar to those known as Mayo's intestinal needles. Eight or ten sutures to the inch are sufficient to occlude the aneurysmal sac. Circular sutures are applied around the orifice of the arterial opening into the sac, and over these a second suture may infold the intima and *fibrous* coats over the first suture, just as we apply a Lembert suture in intestinal work. Then the walls of the sac are folded upon itself in the manner illustrated in this drawing which I now exhibit. Two or three superimposed layers of either interrupted or continuous catgut sutures will completely obliterate the aneurysmal sac, and then a long tension suture of silk may be placed through the skin and tied over a compress to approximate the superficial structures to the deeper layers of the sac and thus avoid

leaving any dead spaces. Ordinary interrupted silkworm sutures are used for completing the operation.

Then a firm compress of gauze and cotton secured by a roller bandage after enveloping the entire limb with cotton, and over all a light plaster-of-Paris cast is placed. Artificial heat is placed around the limb after completing the operation.

I report the following two cases operated on at the University Hospital as evidence of the advantage of the Matas operation over other methods of treatment for popliteal and other aneurysms.

CASE 1.—Mrs. Mary Treter, 60 years old, German nativity, entered The University Hospital July 11, 1909, with the following family history: Mother died aged 83 years of old age; father died aged 77 years from pneumonia. Two step-brothers died, one from complications following a fracture of the shoulder, the other killed in the Civil War. Has one sister living and well, aged 71 years. Patient had the ordinary diseases of childhood; malaria at the age of 21; rheumatism at the age of 40 and up to the present time at intervals. She was married at the age of 18. Has borne nine children, eight living and well; the other child died at birth.

Present trouble. Began about two months before entering the hospital, when she noticed a throbbing lump in the popliteal space of the left leg which caused her a great deal of pain on motion of the leg when walking or exercising. The lump grew larger very rapidly, and as it increased in size the pain became very severe and it was impossible for her to obtain sleep on account of the constant pain. The slightest motion caused increasing pain. She was operated on July 12, 1909.

I found a large sacculated aneurysm of the popliteal artery, the sac containing laminated blood clots and some free blood. The technic of the operation that I have described was carried out in all details, as you see illustrated in these drawings. She made an uneventful recovery and left the hospital July 27, and has remained perfectly well since. (She had also an aneurysm of the ascending arch of the aorta, which I treated by the introduction through a hollow needle of a coil of steel wire which remained in the aneurysmal sac for several days, when one day she complained of a prickling pain in the shoulder, and I found the end of the wire presenting under the skin near the acromion process of the scapula, where I made a slight incision and removed it. The irritating presence of the wire in the sac seemed to have induced an adhesive endarteritis, for the walls of the sac became very much thicker and denser, and the pulsations less marked in the aortic aneurysm.)

(Her husband, Charles Treter, aged 64 years, about six months ago developed aneurysm of the abdominal aorta just below the diaphragm. I made an incision through the abdominal wall over the aneurysmal sac, hoping to be able to compress the aorta above the aneurysm and treat it after the Matas method, but found it impracticable on account of my inability to control by pressure the circulation in the aorta above the aneurysm, as it extended up to or through the diaphragm; so I contented myself with introducing through a hollow needle a coil of silver wire, which still remains within the aneurysmal sac, but up to this time has made no material change in diminishing the size of the sac or arresting pulsation, although the sac wall seems firmer and harder and he has resumed light work.)

CASE 2.—Mr. William M. Rogers, locomotive fireman, aged 31 years, American nativity, entered The University Hospital on August 12, 1909, with the following history:

Mother living and well; father died, aged 56 years, from Bright's disease; two sisters are living and well; one sister and one brother dead. Cause unknown.

Patient had ordinary diseases of childhood. About one year before entering the hospital noticed a dull, aching pain in the back part of his left knee joint.

which began to grow worse, and finally became so severe that he was obliged to give up his work entirely. After a few days' rest he would feel better, but upon attempting to resume work the pain became so severe that he was obliged to give up altogether. On entering the hospital a small tumor behind the left knee joint which pulsated with expansile pulsation, was detected on deep palpation, and a diagnosis of popliteal aneurysm of the fusiform type made. He was operated on August 12 by a long incision parallel with the axis of the fusiform aneurysm in the popliteal space. Sac was opened; the distal and proximal ends of the artery ligated with No. 2 catgut. Two small vessels entering the sac were also ligated, and two small ulcerated areas, probably syphilitic endarteritis, were found. Sac was obliterated by interrupted sutures of No. 2 chromicized catgut, doubling it upon itself in the manner described. Over these two superimposed layers, rows of sutures were placed, and the further steps of operation were the same as described in the first case. He also made an uninterrupted recovery, and left the hospital on August 26. Some swelling of the foot and leg persisted for several months, but eventually disappeared, and he resumed work some four months subsequently. After working on a farm for a few months he resumed his former occupation of driver of a delivery wagon.

In reporting these cases and refreshing your memories with the technique of Matas's operation, I desire to add an expression of my sincere admiration for the author of the method, and to emphasize the conclusions drawn by him that the advantages of a radical cure of peripheral aneurysms by suture of the orifices and obliteration of the sac instead of by ligation of the artery, will be recognized in the new statistics of the operation.

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## THE LEUKOCYTES IN THE DIAGNOSIS, CLASSIFICATION AND PROGNOSIS OF PULMONARY TUBERCULOSIS\*

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Nowhere in clinical medicine have the shortcomings of physical diagnosis been more evident or more distressing than in the field of pulmonary tuberculosis. Not only have we not been able to recognize pulmonary tuberculosis early enough, but also in the diagnosis of the extent of these tubercular lesions have we failed in the great majority of cases. The medical profession has been keenly alive to this double problem for the last 75 to 100 years, and the works of Skoda, Auenbrugger, Gerhard, Louis and Laennec prove distinctly that our medical forefathers were impelled by this one great motive, namely, the diagnosis of the presence and the extent of tuberculosis of the lungs.

With the advent of Villemin, of Robert Koch and his contemporaries a light of hope seemed to illuminate the difficult subject and the bacteriologic diagnosis was thought to remove all obstacles. Tracing these noble endeavors down nearer to our days, we witness the discovery of tuberculin by R. Koch, the work of Baumgarten and his assistants, the recognition of the state of anaphylaxis by Chas. Richet, the vaccine theory of Douglas and Wright, the serum disease of von Pirquet and

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Read at the Sixtieth Annual Meeting of the Illinois State Medical Society at Danville, May 18, 1910.



Schick, and the introduction of various perfected tuberculin reactions, such as the ophthalmic, the cutaneous and the percutaneous tests.

Around these subjects there has grown up a gigantic literature and the mere reading of its bibliography alone would be sufficient to wither the enthusiasm of the staunchest idealist, were it not for the great and inspiring fact that into this enormous, apparently labyrinthian collection of systems of facts, there runs like the thread of Ariadne, the desire for the early diagnosis of pulmonary tuberculosis.

In every land of the globe, untiring students have worked individually or in groups with this great purpose in mind against many odds at the bedside or in the laboratory. Yet in spite of remarkable advances our harvest of practical results has been scant. Indeed some of us have become discouraged and not a little pessimism has developed within the last few years even among sanatorium physicians.

The various tuberculin tests are extremely valuable in the diagnosis of tuberculosis, but they furnish only very little evidence as to the extent of that particular tuberculous affection of the lungs. Every clinician is aware of the fact that he is unable by inspection, percussion and auscultation alone to diagnose to his own satisfaction whether or not there is any infiltration of one or both of the lung-apices, presence or absence of any cavity. Briefly stated, we are unable to diagnose the three stages of Turban by the usual physical diagnostic means alone. Our knowledge as to the extent of pulmonary lesions in tuberculosis is still very fragmentary and it is with the purpose of filling the gap in our chain of evidence that I write this article, the substance of which is an attempt on my part to prove that a method of repeated, *combined* clinical and hematologic examinations, is essential in the diagnosis of the extent of pulmonary tuberculous lesions. After I shall have proven that by repeated total and differential leukocyte counts one is able to measure the degree of anatomic lesions and the degree of biologic or lymphatic tissue resistance to the invading germ or germs, the practical application of this will be easy and logical *de facto*.

The classification of pulmonary tuberculosis will then evidently be easy, its prognosis more nearly accurate, and its treatment more in conformity with accepted facts.

*General Remarks.*—From actual experience and from the literature, I conclude that the study of the leukocytes in the course of tuberculosis of the lungs has never been seriously undertaken. Individual, spasmodic efforts are recorded in a number of publications in the last few years. Findings have been so adverse to explanation, and in appearance so contradictory that enthusiasm gave way to disappointment in the workers themselves and produced skepticism among medical men generally. Blood findings have been considered as irrelevant, misleading and grotesque. Changes in the total white blood count were called accidental even by leading men in the profession, and the differential leukocyte counts were made so rarely that the vast majority of physicians did not know how to make them and do not know even to this day. Is it a wonder then that this source of information has been neglected so long and "its current turned awry?" I can easily see that ignorance and not wilful intention has led to this neglect. But how came this state of ignorance about? Here are several reasons:

1. Bacteriologists and anatomo-pathologists have so swayed medical opinion these last three or four decades that the morbid agents or agencies have been considered alone and to the exclusion of the host. Invasion by germs became synonymous with infections and tissue reactions were attributed only to the invading toxin or infectious agents. Parasitism usurped the field and the vital resistance of the animal cell was lost sight of. In the wake of otherwise brilliant bacteriologic discoveries the medical world seemed to lose its traditional conservatism and thought itself near the solution of the riddle of the universe. Scientists wove into their reasonings the Darwinian theory and considered man as a play tool of elements or at the pitiless mercy of countless bacteria, while forgetting the eternal truth that man is immortal were it only by his protoplasm. Such views obscure our horizon and retard our progress.

2. Over and over again we lose sight of the fact that (a) the red blood cells serve for respiration only. Both pulmonary and cellular exchanges of gases are transmitted through their agency. They are but very little involved in infections. (b) That the leukocytes subserve nutrition *and* immunity.

3. We must accept it as a fact that all leukocytes develop from one mother cell, the lymphagon or lymphoid cell. The various forms of leukocytes encountered normally in the bloodstream represent the same cell only under a different form, which are nothing but the four to five different stages of its life cycle, the polymorphonuclear cell being geneologically the oldest white blood cell.

4. We can rationally assume that the function of a white blood cell changes with its form, respectively with its stages of development. I believe the mononuclears serve for slow, deliberate phagocytic defense and digestion of noxa, while the polynuclears serve mainly as chemical, or immediate, or specific defensive agents. The rôle played by the eosinophilic polymorphonuclears in immunity is a very important one, but still far from being clear. The basophilic cells are a form of immature, atavistic, large mononuclears without any particular function.

5. The leukocytic granules brought into such prominence by Paul Ehrlich that they have been given his name, have been exalted beyond their proper biologic importance. These histo-chemical observations, though very ingenious and even brilliant, have very materially encumbered the progress of leukocytology and by a technic with phantastic blood stains have changed hematology from a biologic study into one of experimental and speculative chemistry. The function of leukocytes is certainly not alone the production of granules, but also nutrition and defense of the cells. Just how they accomplish these two things neither the lateral chain men or anybody else knows.

6. It is also quite rational to assume that an increase in the total number of leukocytes, or an alteration in the proportion of these cells corresponds to a change in the body fluids in which the mesoblastic tissue cells are bathing. That this response to a toxic or a toxi-infectious agent should manifest itself in a variation of the number and proportion of white blood cells is the most logical thing we could expect.

7. A leukocytosis means the increased production of leukocytes in the leukogenic or leukopoietic tissues and their pouring into the bloodstream.

8. A polynucleosis, which usually is associated with a leukocytosis, I explain as an expression of an agency which enormously hastens the maturation of mononuclears into polynuclear leukocytes. This excessive

TABLE I.—THE LEUKOCYTES IN HEALTH AND IN PULMONARY TUBERCULOSIS

	Polynu- clears		Small Mononuclears		Eosino- phils	Total.
	Pr. Ct.	Pr. Ct.	Pr. Ct.	Pr. Ct.		
Children (35 cases).....	47	46.5	3.5	3		6,000
Adults (25 cases).....	64.2	29.4	4.2	2.2		7,600
Pulmonary tuberculosis—1 (130 cases)	53.5	39	4.5	3		4,600 to 7,000
Pulmonary tuberculosis—2 (30 cases)	67	25.5	5.5	2.5		8,000 to 10,000
Pulmonary tuberculosis—3 (160 cases)	79.6	14.5	4.7	1.2		9,000 to 16,000
Acute pyogenic infectious diseases (72 cases) .....	86	8.5	5	.3		12,000 to 50,000

Notice large percentage of small mononuclears in childhood and in incipient pulmonary tuberculosis.

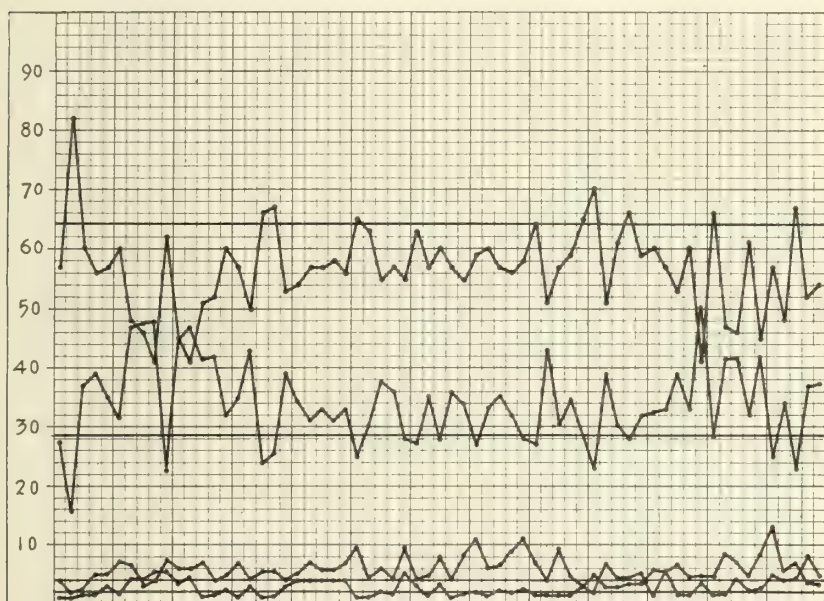


Chart I.—Sixty-five differential white counts in eleven cases of incipient pulmonary tuberculosis. Note the high percentage of small mononuclears with low polynuclears. (See Chart 5.)

production of polymorphonuclears is necessary for the rapid neutralization of toxins, a condition met with in most of the acute intoxications or acute infections.

9. The eosinophils disappear in acute infections and reappear with the advent of antibodies. Their function seems to be the storing and protection of ferments necessary for immunity mainly. Their granules contain the principal ingredients for antibody formation.

10. My method of this interpretation of a leukocyte picture is of real value in the diagnosis of the various infections, acute or chronic.



The leukocytes *do not* react in a *specific* manner to any single infective germ or any one single toxin, but they do react in a quasi-characteristic manner to certain *groups of germs* and to certain *groups of toxins*. Thus the reactions toward the pyogenic infections differ from those of the

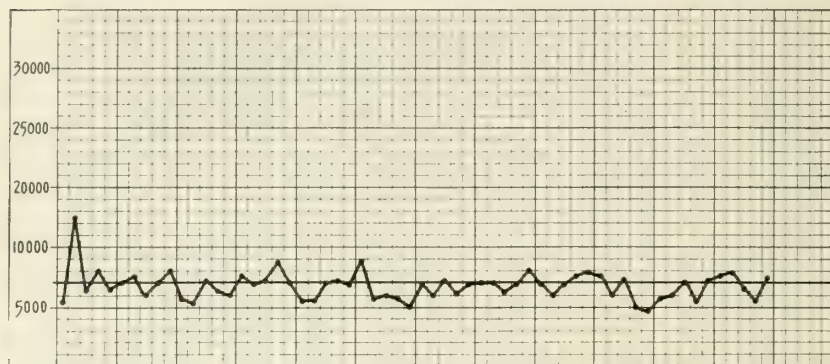


Chart II.—Total white counts in incipient pulmonary tuberculosis. Leukocytes mostly below normal. They rise only on "colds" or other infections.

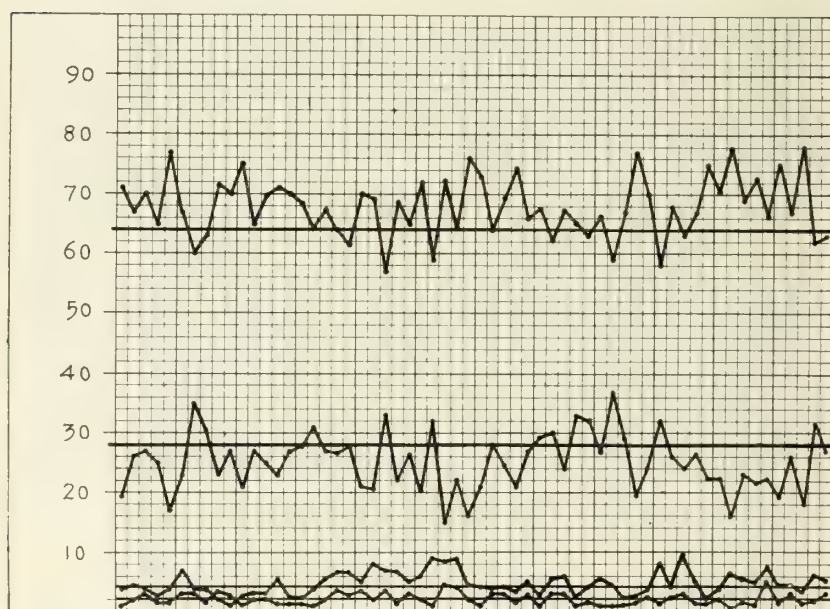


Chart III.—Sixty differential leukocyte counts from ten patients with pulmonary tuberculosis in second stage. Compare with Chart 6. Note the divergence of the polynuclear line.

typhoid or colon bacillus group, and they react in a peculiar manner towards the tubercle bacillus or its poisons. Indeed, the leukocytology of tuberculosis is based upon this very fact. The white blood picture of tuberculosis corresponds exactly to the cellular changes in tubercular tissue. It is only natural that the blood as a fluid tissue should behave

towards irritants like any other mesoblastic derivative. Viewed from this biologic standpoint, the use of the leukocyte picture obtains the significance of a biopsy and assumes a positive diagnostic and prognostic value. Inflammatory changes in the leukocyte picture correspond exactly to the histologic alterations in the same conditions. Acute infections will differ

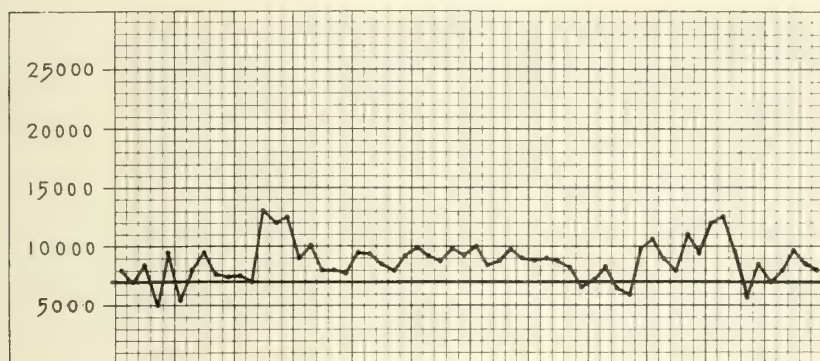


Chart IV.—Total leukocytes in pulmonary tuberculosis, second stage (the caseous or necrotic stage. Corresponds to Chart 3. Total numbers nearly always above normal average.

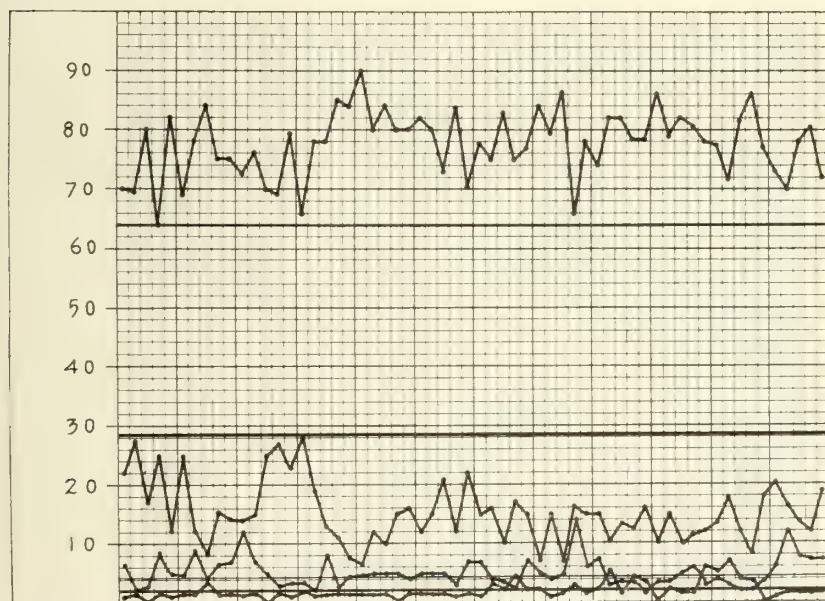


Chart V. Leukocyte picture of pulmonary tuberculosis, third stage. Sixty differential counts. See Chart 7. Note the high polynuclears and the very low, small mononuclears.

in their effects on the white blood from those of a chronic nature. This is also self-evident.

Any cell when irritated tends to assume again embryonal characters in the way of form, histo-chemical reactions, nuclear and protoplasmic

changes, etc. The leukocytes make no exception to this general law of biology. Thus during the first or incipient, or lymphangitic stage of pulmonary tuberculosis, the leukocytic picture tends to and does return towards the infantile white blood picture with a predominance of mononuclears, a leukopenia, a slightly increased eosinophil percentage, greatly lessened neutrophil, and a normal red blood count. (See Chart II). *This explains the first stage of pulmonary tuberculosis.* It corresponds exactly to what many authors have called the pretuberculous stage, or the stage of chloranemia. Henceforth the clinical term of chlorosis should be gracefully eliminated. When tuberculosis becomes clinically manifest to the average physician it has already passed the first stage and entered the second or at times even the third stage.

When the first stage of pulmonary tuberculosis, which is identical with the infiltrative lymphoid, lymphangitic stage of anatomic-pathologists (Petruschky) has passed, a second stage of tissue changes occurs in the form of cheesy foci or caseous transformation of the lymphoid tubercles. This has its leukocytic parallel in the appearance in the blood picture of the signs of intoxication and irritation. (See Chart IV).

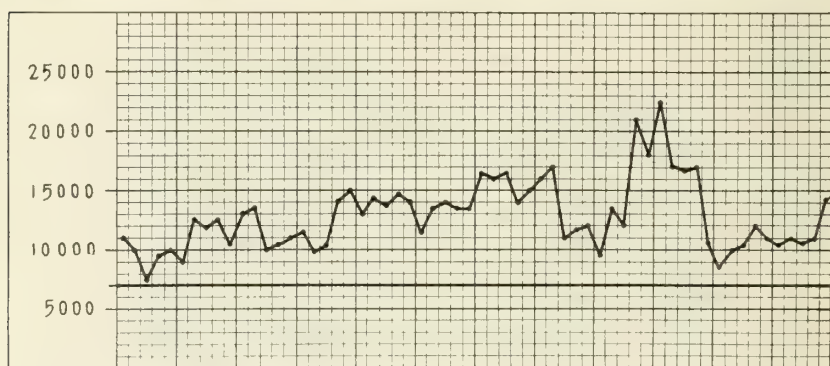


Chart VI.—Total white blood cells in pulmonary tuberculosis, third stage. Corresponds to Chart 6. Counts nearly all above 10,000. Mixed infection stage.

More polynuclear elements, less mononuclears, instead of a leukopenia, a small or relative leukocytosis, and lessened eosinophils, clinically night-sweats, hemorrhages from the lungs, greater frequency of "colds" which are very likely nothing else but the intermittent outbreaks of anaphylaxis in which external influences, such as cold, may play a subordinate though ill definable rôle. This explains the second stage of tuberculosis pulmonum. We have here the leukocytic counterpart of distinct secondary anatomic or tissue changes.

The accession of a second infection to a primary one will also and naturally produce changes of its own, which are superadded to the signs of irritations already present. This explains the leukocytic picture (Chart IV) of the third stage of pulmonary tuberculosis, which really has less to do with the tubercle bacillus than either of the first two stages. Louis said, over sixty years ago, before the findings of Koch were dreamed



of: "Your patient may be tuberculous, but be careful lest he become phthisical." The third leukocytic stage corresponds exactly again to the cellular tissue changes produced in the course of any chronic pyogenic infection which has been added to previously existing infective granuloma of which tuberculosis is the type. The blood picture shows us that the third stage of pulmonary tuberculosis has really little to do with the tubercle bacillus. It is essentially a pus infection, and the treatment, therefore, should be surgical, opening and drainage. The time will come when the surgery of the chest shall have so advanced as to successfully undertake the cure of these at present hopeless cases.

#### CONCLUSIONS.

1. Five or six successive, double white blood counts taken at intervals of at least two to three days constitute the leukocytic picture of a case of pulmonary tuberculosis.

2. No diagnosis of tuberculosis is complete without this blood picture.

3. Turban's classification is therefore in need of modification.

4. For the prognosis as to health or as to life this blood picture is essential.

5. A return towards the infantile blood type is a good prognostic sign, while a decline towards the acute pyogenic disease blood-type is of unfavorable omen.

6. The fairly constant maintenance of a certain level is one of the most striking characteristics of these blood pictures; that is, of their leukocyte curves.

7. Incipient tuberculosis of the lungs is anatomically represented by a small cell infiltration, a lymphoid, or lymphangitic process which shows itself in a parallel, infantile blood picture, the essentials of which are a lessened number of total whites, a lymphocytosis, slightly exaggerated eosinophils, a tendency towards crises of mixed leukocytosis, normal red blood count, and normal hemoglobin.

8. The second stage of lung tuberculosis established pathologically is constituted by tubercles which caseate in the course of their development. Thereby they produce the second clinical, or tuberculo-toxic stage, which is characterized by a blood picture of toxemia: moderate polynucleosis without corresponding leukocytosis, absence of lymphocytosis due to the predominance of toxemia, lessened eosinophils, and very little tendency to lymphocytic crises.

9. The third stage of pulmonary tuberculosis corresponds anatomically to cavity-formation, together with mixed infection, or to a caseous tuberculous pneumonia. The leukocyte picture of this stage combines the attributes of a chronic streptothrix or granulomatous infection, with that of a pyogenic germ invasion. The sapremic and pyemic processes outweigh the lymphangitic and caseous changes. This is very well exhibited in the leukocytology of this stage, the characteristics of which are: moderate leukocytosis, marked polynucleosis, greatly lessened lymphocytes, increase of large mononuclears, decrease or absence of eosinophils,

frequent exacerbations of chronic intoxication. Among the red blood cells we remark lessened hemoglobin, lessened total reds, and more or less evidences of exhaustion or of marked stimulation of the hematopoietic tissues. (See Charts IV, V).

10. Five years of work among tuberculous patients justifies the conclusion that tuberculin is indicated mainly in the first stage and most useful therein, that in the second or toxic stage it is difficult and hazardous to administer tuberculin in any of its forms, partly because of the hypersusceptibility of these patients and partly because these patients are steadily being auto-inoculated by tuberculin-like substances from the cheesy degeneration of the tubercles. I have never seen positive or lasting results from the use of tuberculin, due to administration in the third stage of tuberculosis. In my opinion it is useless in the third stage, and in all probability harmful.

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#### DISCUSSION

Dr. E. H. Butterfield, Ottawa:—We are certainly very much indebted to the essayist for his contribution entailing as much work as it must have done. In routine blood examinations the absence of leukocytosis is of great significance, especially in early tuberculosis. If leukocytosis occurs during the course of pulmonary tuberculosis, it is strongly indicative of complications and usually borne out by clinical symptoms. It is also well to remember that in all pyogenic infections either associated or not with pulmonary tuberculosis, especially the formation of abscesses, inflammation of serous membranes, leukocytosis is great. Tuberculosis associated with suppuration means a predominance of the polynuclear elements with leukocytosis. Since no single sign or symptom is pathognomonic of early tuberculosis, we deal largely with averages, and leukocytosis is placed on a par with other data in making a diagnosis. In the majority of cases the presence or absence of leukocytosis stands for more than ordinary data, but standing as an isolated fact it gives us nothing. Considering it in relation to other data, the number of leukocytes is important, as well as the blood picture shown by the differential count.

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### ON HEMOLYTIC JAUNDICE\*

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BALTIMORE

From early days the conception of two varieties of jaundice has prevailed, one form depending upon a disturbance of hepatic functions and the other upon changes in the blood.

Castaigne quotes Bianchi (1710) as saying: "*Sunt duo primarii icteri genera; primae classis icterus a vicio hepatis, alterius speciei icteri a causa solutione sanguinis.*" Reil (1792) describes polycholic jaundice due to an abnormal bile production by a direct transformation of the blood. The studies of Naumyn, Stadelman, Minkowski, Stern, Chaffard, Girode,

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\* An address delivered before the Chicago Medical Society, Nov. 16, 1910.

Banti and others have led to the general acceptance of the conception that the so-called hematogenous jaundice in contra-distinction to the hepatogenous is hematogenous only in its remote origin, in so far as it is primarily the result of increased blood destruction. The immediate cause of jaundice is still generally regarded as of hepatic origin. In support of this idea it has been pointed out that those jaundices which result from increased blood destruction are at the same time associated with an excessive bile formation as shown by the usually large amount of bile in the feces. These so-called pleiochromic jaundices have generally been regarded as dependent on increased blood destruction, excessive bile formation, inspissation of the bile, intrahepatic stasis followed by entrance of bile into the general circulation. One might fancy, as suggested by Minkowski, that the jaundice in some of these cases was due to a perversion of the functions of the liver cell, through which that substance which is normally secreted into the bile ducts, namely bile, takes the place of or accompanies those bodies which the liver ordinarily pours into the blood and lymph, *i. e.*, sugar and urea—the process occurring without definite obstruction. However this may be, the idea of a hematogenous jaundice in this sense would appear to be generally accepted. And examples, such as the jaundice seen after large internal hemorrhages, that associated with pernicious anemia and that which occurs after acute deglobulizing poisons, are too familiar to mention.

It was early noticed that in certain non-obstructive jaundices no bile pigment appeared in the urine which, however, contained other pigments giving it a high color. This observation led to the long disproven hypothesis that such conditions might be examples not of a true bilirubin jaundice, but of the entrance into the blood of some other chromogenic product of the diseased hepatic cell. The frequency with which urobilin is found in the urine in this so-called acholuric icterus tended to fortify in the minds of some observers (Gerhardt, Hayem and Tissier) the conception of an ortho- and a meta-pigmentary jaundice. The coloring matter in these instances of meta-pigmentary jaundice which was shown to be urobilin, was, by many, regarded as the product of a perverted hepatic metabolism.

Whatever the frequency of urobilin in the urine in these cases of acholuric icterus, Gilbert appears to have shown that all jaundices are due to the presence of true bile pigments in the serum. Gilbert, and his associates and students have devised a delicate colorimetric test by which they believe that they can demonstrate the presence of bile in the serum of all healthy human beings in very small but yet recognizable quantities. The average proportion they estimate at about 1:30,000. Under pathological circumstances the amount may rise to such an extent that it may equal or exceed the proportion of coloring matter in normal bile.

While the idea of ortho- and meta-pigmentary jaundice must be abandoned, yet non-obstructive jaundice may well be divided into choloric and acholuric varieties according to the presence of or absence of bile pigment in the urine. The reason for the presence of bile in one



case, and its absence in another and the significance of urobilin are matters of present controversy upon which one can only touch at this point.

In general the acholuric jaundices are not very intense and it may be true that the absence of bile in the urine is dependent merely upon the quantity of bilirubin in the circulation. It is unquestionable that in some cases of hematogenous non-obstructive icterus, bile pigment does appear in small quantities from time to time in the urine. As to the significance of urobilin, it has been suggested that it is the result of an excessive secretion of bile into the intestines. The increased quantity of stercobilin is in part reabsorbed and, not wholly arrested by the liver, is eliminated by the kidneys as urobilin. The amount in the circulation is, in most instances, too small for recognition unless it be present in the form of a chromogen (Chalier). It is absent in obstructive jaundice, probably because of the absence of bile in the intestine.

Aside from frankly obstructive jaundice the conditions under which icterus are observed are exceedingly numerous, so much so as to lead to many and confusing classifications. In the main these conditions are associated with severe intoxications or infections—and the jaundice is probably often the result of infective cholangitis or of degenerative changes in the hepatic lobule which result in the entrance of bile into the circulation. In other instances such as pernicious anemia or paroxysmal hemoglobinuria, a primary hemolysis plays certainly an important part. Of recent years attention has been especially directed to an interesting group of cases in which a primary hemolysis is assuredly the initial event in the development of the icterus.

Gilbert and his pupils have described as chronic simple jaundice a condition seen often in groups of members of certain families in which the affected individuals show a slight jaundice of the skin and perhaps of the conjunctiva, and a cholemia considerably more marked than in the normal individual. The urine contains no bile but is usually rather concentrated and gives a positive test for urobilin. In these cases which occur often in individuals suffering from superacidity, bradycardia, hypothermia, and frequently with general neurasthenic symptoms, there is a constant excess of bilirubin in the serum above the normal, that is, usually a proportion of about 1/17,000. The condition, in other words, would appear to be an exaggeration of the physiological cholemia.

In addition to these cases of chronic simple jaundice Gilbert has, however, described others in which there is a distinct splenomegaly. Now these instances of chronic congenital jaundice with splenomegaly, several examples of which have been described by English authors (Murchison, Wilson), are not unlike the chronic, splenomegalic, non-obstructive jaundice described by Hayem in 1888, a malady which he believes to be of infectious origin.

Beginning with the observation of Minkowski (1900) a series of studies have drawn attention to these cases of congenital jaundice with splenomegaly. Minkowski (1900) describes a remarkable syndrome of congenital jaundice associated with urobilinuria, splenomegaly and side-

rosis of the kidney. The occurrence of these symptoms could be traced through three generations, affecting at least eight members of the family. None of the individuals observed showed any changes in the blood, while the general health was not impaired.

Bettmann in the same year, described a similar case in which the jaundice displayed marked variations in intensity, deepening after exercise, food, drink, and excitement, especially anger, and also after exposure to cold. An experimental hemoglobinuria could be produced in this case by the application of cold.

Pick (1903) and von Krannhals (1904) reported like cases, the latter having observed a family of which nine members in three generations showed a chronic, congenital splenomegalic jaundice. In all these cases the stools were colored, the urine dark, free from albumin, blood and hemoglobin. It showed constantly the presence of urobilin, but never bile. The number of red corpuscles was below normal—2,300,000 and 3,500,000 respectively in the men, and on one occasion as low as 1,000,000 in one of the women. The hemoglobin varied from 55-65 per cent. The red blood corpuscles were irregular in contour and varied in size from 6-10 microns. There were no nucleated reds, but well-marked polychromatophilia.

Minkowski was fortunate in obtaining a necropsy on one of his patients. No especial changes were found in the liver, and the bile passages were quite clear. A small pigment stone was found in the gall bladder. The spleen was enlarged and, microscopically, there were simple hyperplasia and hyperemia. The kidneys showed a brownish discoloration produced by a granular pigment deposit in the epithelial cells of the convoluted tubules. Not only did this pigmentation give an intense reaction for iron, but there was a large amount of material united with proteids, which gave the reaction only after boiling with ammonium sulphid. From but one kidney about 0.95 grams of pure iron was obtained. Similar pigmentation did not occur in any other organ. Minkowski regarded the condition as dependent on an anomaly of the blood pigment transformation, perhaps consequent upon a primary change in the spleen.

These cases seem to bear a striking resemblance one to another and suggest a common cause. The absence of evidence of hepatic disease and the existence of extensive siderosis, especially of the kidney, in some respects analogous in that seen in Addisonian anemia, on which Hunter especially has insisted, pointed to an increased blood destruction as a primary cause of the disease—an hypothesis adopted by most of these authorities.

In 1907 Chauffard made an interesting contribution to the study of this syndrome by the discovery in a similar case, of a marked fragility of the red blood corpuscles on exposure to hypotonic solutions of sodium chloride according to the method of Vaquez and Ribierre. This observation he was able to confirm in two patients presenting a similar syndrome in the wards of his colleague Vidal. Thus, while with the normal red blood corpuscles hemolysis begins at 0.44 and is complete at .32 per cent., in these three cases the beginning and end of hemolysis were respectively

.62 and .36, .66 and .34 and .52 and .18 per cent. The average size of the red blood corpuscles was somewhat diminished. Widal and Philibert on further study, were unable to demonstrate the presence of any hemolytic properties in the serum of their own patients, either with regard to their own corpuscles, or those of other individuals. This fragility of the red blood corpuscles, so marked toward hypotonic salt solutions was also evident in respect to other hemolytic substances. The diminished resistance of the red blood corpuscles has been a constant feature in the considerable number of cases of this malady which have since then been reported.

A few months later Chauffard described another interesting hematological feature which he had observed in all cases of this disease which had come under his observation, namely: the presence, on vital staining, of a peculiar basophilic granulation of the red blood corpuscles. Chauffard's first studies were made by staining freshly-made and fixed smears of blood with Pappenheim's (pyronin and methyl-green) solution. Many of the red blood corpuscles which are of a slightly grayish color and barely visible, having lost their refractiveness with their hemoglobin, show a fine granulation of a bright red color. These dots, generally arranged about the periphery, are sometimes scattered throughout the cells in the form of a definite granulation. The granular corpuscles are generally somewhat larger than their neighbors; they may be demonstrated well by the method of vital staining of Widal, Abrami and Brulé.

Four to six drops of blood are allowed to fall into a test tube containing 10 drops of a basic coloring matter which is quite isotonic and contains in addition oxalate of potassium to prevent the coagulation of the blood.

Oxalate of potassium, 2%, 2 c.c.  
Unnas' polychrome methylene blue, 10 drops      {  $\Delta=0.60$

The fresh corpuscles are allowed to remain for 10 to 20 minutes in contact with the solution, after which the mixture is centrifugalized, the supernatant fluid is removed, and the corpuscles drawn up with a pipette and placed upon slides upon which they are spread as an ordinary drop of blood; the covers are then dried and fixed by heat. Such preparations may be indefinitely preserved.

The distribution of the granules is irregular. Sometimes scattered, they are usually collected in groups of two and three. Sometimes they are arranged in the form of a wreath or crown at the periphery of the corpuscle; they are generally distributed in such a manner as to suggest filaments wound around within the cell and showing frequent varicosities; they are unequal in size and of irregular form. Not infrequently this granular net-work is gathered together toward the periphery or near the centre of the cell in such a manner as to suggest grossly a nucleus.

Sabrazès has called these corpuscles "granulo-reticulo-filamentous." The apparent "reticulum" is very adherent to the red blood corpuscle. If a dried and stained specimen be washed with pure water, the red blood corpuscles lose their blue color, while the granular filamentous appearance remains. Indeed, in some cases the reticulum may be found outside the



corpuscle, lying between other well preserved elements. Widal, Abrami and Brulé have thought that the polychromatophilia which is present to a certain extent in these cases bears a close relation to the presence of granular corpuscles, but this does not appear to be an absolute rule.

I have gone into this question of granular corpuscles rather fully as it is interesting to see how closely these observers agree in their account with the careful studies of Vaughan in 1903, for many of those present have doubtless recognized before this, the granulation which, though first described by Pappenheim,<sup>1</sup> was studied with especial thoroughness by Victor C. Vaughan, Jr., in the *Journal of Medical Research* for 1903. Vaughan found these granular elements in somewhat under 1 per cent. of all corpuscles in normal individuals, and in the new-born where they were most frequent, the highest percentage with but one exception (♂) was 4. In pernicious anemia with active regeneration they were found in great numbers—once as high as 18 per cent. In congenital icterus with splenomegaly the percentage is usually over 10, and figures as high as 40 have been reported. Châlier, however, in his excellent monograph, is inclined to regard these figures as excessive, asserting that he himself has never seen a percentage above 20. This granulation, it is needless to say, is quite distinct from the basophilic granulation of Grawitz and others. The granules are different in shape and arrangement, and are not to be stained in the fixed specimen. They are, of course, entirely distinct from the remarkable Schüffner's granules which appear with Romanowski's stain in certain parasitiferous corpuscles in tertian and estivo-autumnal malaria. It is probable that this phenomenon is simply an indication of active blood regeneration but there are apparently few conditions in which the frequency of these granular corpuscles compares with that in congenital jaundice—a fact which seems to give them a real diagnostic value.

These observations have been confirmed by a considerable number of observers, and the picture of this disease, which Chauffard has called hemolytic jaundice, is sufficiently definite to be regarded as a distinct clinical entity.

The patient often belongs to a family other members of which have suffered from the same condition. Early in life, sometimes immediately after birth, but in other cases later, perhaps not until puberty, a jaundice appears. This jaundice is usually of a moderate degree, varying from a pale lemon hue to a well-marked golden yellow. It is remarkably variable, increasing often under physical effort or emotional excitement. In one of my cases the mother asserts that it is always worse after violent exercise, dancing, or bad colds. The stools are of normal color or pleiochromic, especially under those conditions associated with increase in jaundice. The urine is of rather high color, often of a brownish almost mahogany hue but free from bile. Urobilin is usually demonstrable. The blood shows an anemia of moderate degree, usually between 3,000,000 and 4,000,000 red corpuscles, although in one case a blood

1. This whole subject is excellently discussed by Ferrata, who, in common with every continental author, ignores Vaughan's excellent work (*Fol. hematolog.*, Leipz., 1910, ix, 1 Th., 253).

count of under two million is reported. There is usually considerable anisocytosis, but little or no poikilocytosis. The average size of the corpuscle is often rather below the normal, a point upon which Chauffard has particularly insisted. This was not noticed in our two cases. The color index is somewhat reduced. Polychromatophilia is usually well marked. In the vital staining the granulation described first by Pappenheim, Vaughan, Sabrazès, Chauffard and others is present in a large number of corpuscles. The percentage of granular elements is usually above 10 and may be as high as 20, or even more. The serum is of a clear, yellowish color, and the test for bilirubin is positive. Urobilin is generally undemonstrable. The leukocytes are usually of normal number or slightly increased. The differential count shows nothing remarkable beyond evidences of increased marrow activity manifested by a high percentage of eosinophils and the occasional presence of myelocytes and nucleated red cells, normoblasts. The serum shows a rather high degree of hypertonicity. Starkiewicz regarded this condition as a mechanism of defense on the part of the organism to protect the fragile red corpuscles. Troisier, however, believes it to be the result of exosmosis of the corpuscular salts as a result of the fragility of the red cells.

The remarkable feature of this interesting condition is that subjective symptoms are usually absent despite the constant anemia. The patients are generally unconscious of any disability. They appear to adapt themselves so well to their condition that it is only occasionally that a complaint is elicited. There is a complete absence of all the ordinary phenomena of biliary intoxication; there is no bradycardia, no pruritus; no tendency to hemorrhage; no xanthelasma. The patients are, indeed, as Chauffard has gracefully said, "*a peine des malades*"—"plutôt des icteriques que des malades," barely patients, rather icterics than patients. Thus, in one of my two cases, the patient, jaundiced since birth, was a perfectly healthy looking girl who, despite the fact that the blood count on the first two occasions when I saw her, was 3,680,000 and 3,200,000 respectively, considered herself well and took part in all the ordinary sports of her companions.

There is one exception to this rule. Many of these individuals suffer from attacks of abdominal pain suggestive of biliary colic. These pains localized in the epigastrium and in the region of the gall bladder, are often accompanied by fever and by an aggravation of the jaundice. In a number of instances they have been so severe as to lead to operation. They were present in both of the cases which I have observed and in the first led to a cholecystostomy which revealed nothing abnormal. In many cases it is probable that the attacks are due to the presence of small pigment stones in the gall bladder, such as have been found in five of the six cases of congenital jaundice that have come to necropsy—every instance in which the gall bladder was examined.

*Acquired Hemolytic Jaundice.*—This remarkable syndrome—chronic acholuric, pleiochromic jaundice without the usual symptoms of biliary intoxication, associated with anemia, enlarged spleen, and siderosis of the viscera is not, however, always of congenital origin. Soon after Chau-

fard's first observation, Widal and Abrami, Chauffard and Troisier, Le Gendre and Brulé, von Stejskal, Oettinger, Parkes-Weber and others reported a series of interesting observations in which a similar train of symptoms came on without apparent cause in adult life. The onset of the jaundice in these instances followed various different accidents—an ischio-rectal abscess (Widal and Abrami), hemorrhage following a miscarriage (Widal and Abrami), severe nervous shock (Chauffard and Troisier), acute gastro-enteritis (LeGendre and Brulé). In other instances, such as the two cases of von Stejskal, that of Oettinger, and that of Parkes-Weber, the process seems to have appeared without striking initial symptoms. Again, in a considerable group of cases a jaundice of a transient character presenting similar hematological phenomena—an anemia with signs of regenerative activity of the bone marrow, granular corpuscles on vital staining and a marked fragility of the red cells, has been observed in the course of a variety of conditions, cancer of the stomach (Chalier); cirrhosis of the liver (Chalier and LePlay); malaria (Saquépée, Chalier); repeated hemorrhages in cancer of the bladder: (Widal and Joltrain); streptococcus infection (Saquépée); uncinariasis (Darré); syphilis (Gaucher and Giroux); pulmonary tuberculosis (Landouzy); jaundice of the new-born (Sabrazès and Leuret; Cathala and Daunay).

This acquired hemolytic jaundice, as it has been called by Widal and Abrami, who described the first cases, does not constitute a definite disease picture to the same extent as does congenital splenomegalic jaundice, but rather an interesting syndrome. Acquired hemolytic jaundice may be divided, as suggested by Brulé, into the apparently *primary* and *secondary* cases. The former arise either without obvious cause or during the course of some acute transient malady, after which they persist with seeming independence. Secondary hemolytic jaundice is observed in a transient manner associated with acute infections or poisons, or as a terminal phenomenon in the course of some chronic disease.

One essential difference exists between most of the cases of acquired hemolytic jaundice and the congenital malady, namely: the existence in the former of an anemia sufficiently grave to occupy a prominent position in the clinical picture. The anemia may, indeed, be intense and is associated with the usual subjective symptoms. There are often striking variations in the intensity of the jaundice and grade of anemia. Sudden paroxysms of fever associated with painful swelling of the spleen and extremely rapid fall in the number of red corpuscles have been described.

A patient of Widal and Abrami's showed on May 19, 2,600,000 red blood corpuscles; ten days later, while in apparently good condition, there appeared severe headache, dyspna, marked exacerbation of the jaundice, and in a day or two the blood count showed but 850,000 red elements. In one of von Stejskal's cases the blood count rose in eighty days from 640,000 to 4,000,000.

The blood picture is often very similar to that in pernicious anemia; marked oligocythemia; a high color index; anisocytosis; poikilocytosis; often an increase in the average corpuscular diameter. There are almost



always marked evidences of marrow activity in the shape of nucleated red blood corpuscles, among which megaloblasts are often found. Contrary to what one sees in pernicious anemia, the leukocytes are usually somewhat increased in number, and, occasionally, there is a well-marked leukocytosis which, on differential count, shows a considerable proportion of myelocytes and a large percentage of eosinophils. Granular corpuscles are present on vital staining, as in the congenital form of the disease; sometimes, however, these are not so numerous.

There are two striking points of difference in the hematological picture between acquired and congenital hemolytic jaundice. The corpuscular fragility, so evident in the former condition, is often very slight in the acquired disease when the test is made with unwashed corpuscles.

Widal and Abrami showed early that in acquired hemolytic jaundice the corpuscular fragility may, indeed, be almost inappreciable if the test be made with the whole blood. With deplasmalized corpuscles, however, the resistance is distinctly, sometimes very markedly, diminished. These authors showed that this increased fragility of the deplasmalized red corpuscles is common to both congenital and acquired varieties of the disease with the essential difference that while in congenital hemolytic jaundice the fragility is usually demonstrable with the whole blood, in the acquired condition the resistance of the whole blood may be normal, while that of the deplasmalized corpuscles may show a very marked reduction. The deplasmalized red blood corpuscles of acquired hemolytic jaundice show also a distinct diminution in resistance toward other hemolytic substances, such as anti-human sera of all sorts and leech extract. In normal blood the resistance of the deplasmalized corpuscles does not differ essentially from that of the whole blood.

While it is difficult to avoid the conclusion that this increased corpuscular fragility has a definite association with the hemolysis which occurs in these cases, yet it should be remembered that no direct parallelism can be drawn between the degree of fragility and the extent of the anemia. The conditions existing in congenital and acquired hemolytic jaundice form an interesting paradox, as has been pointed out by Brulé, on the one hand a marked corpuscular fragility associated with a moderate anemia, on the other, a moderate fragility and an intense anemia. "It is impossible to draw a direct conclusion as to the fragility of the red blood corpuscles in the organism from their fragility *in vitro*."

This diminution in the resistance of the deplasmalized corpuscles may be restored if they be brought into contact again with their plasma. Although there is a slight difference between the resistance of the corpuscles according to the manner in which they are separated from their plasma (Iscovesco, Salignat), yet these differences are so slight that they need not be considered; in fact the quantity of serum necessary to restore the resistance of separated corpuscles is so large that, practically, it is unnecessary to wash the corpuscles deplasmalized in an oxalate solution. The antihemolytic power of the serum is not restricted to that of the patient himself. It is present in other and heterologous sera. Heating to 56° C. for a considerable period of time does not remove the power.

There would then appear to be no evidence of the existence of a specific anti-hemolytic substance. Widal, Abrami and Brulé believe that the anti-hemolytic power is dependent on some special physical property or properties of the serum.

The blood of some individuals with acquired hemolytic jaundice possesses one characteristic which, for the moment, appears to be rather special, and is not observed in the congenital forms, namely: an auto-agglutinative power of the serum. The test is a relatively simple one; it is thus described by Brulé:

One lets fall into a watch glass 10 drops of the patient's serum and then a drop of red blood corpuscles isolated by centrifugation; the mixture is shaken up and then allowed to rest. Soon the corpuscles are seen to gather at the bottom, sometimes appearing to form little masses. But if there be no auto-agglutination, we need but to shake the glass slightly to restore the mixture to its previous homogeneity and to disperse the corpuscles in the serum. If the auto-agglutination be positive, one sees after a period varying according to the intensity of the phenomenon from one to twenty minutes, a collection of the corpuscles into little granules easily perceptible by the naked eye, which give the emulsion an aspect comparable to brick dust; violent and prolonged shaking cannot dissociate these corpuscles. Little by little the agglutination increases, the corpuscles gather at the bottom of the watch glass where they form an homogeneous pellicle, the supernatant serum becomes limpid, and shaking no longer dissociates the hematic pellicle. If at the beginning of the phenomenon one examine a drop of the serum microscopically it may be seen that the corpuscles, instead of disposing themselves in rouleaux as normally, gather in little islands, between which there float a few isolated corpuscles.

This phenomenon has been found in a number of instances of acquired hemolytic jaundice. In others, such as the cases of Widal and Joltrain, and that of Parkes-Weber, auto-agglutination has been absent. The phenomenon is interesting and may be of considerable diagnostic value. It is not present in congenital hemolytic jaundice, although the patient of Bénech and Sabrazès whose jaundice is believed by the authors to have been acquired from a wet nurse, might be regarded as belonging to this class. It has, however, been observed in one instance of hepatogenous jaundice by Brulé. It should be said that it has not as yet been studied sufficiently to justify far-reaching conclusions as to its diagnostic value or significance.

Attacks of pain in the region of the gall bladder associated with fever and exacerbation of the jaundice are very common. Indeed, the first three reported cases (Widal and Abrami; Chauffard and Troisier) were all operated upon for suspected gall stones. In one of these cases a little bile sand was found: in the other instances the gall bladder was quite clear.

Acquired hemolytic jaundice presents itself in a variety of forms. The most important are:

1. Those cases simulating cholelithiasis.
2. Those simulating pernicious anemia with jaundice.
3. Those simulating a chronic infectious cholangitis. Chronic infectious, splenomegalic jaundice (Hayem).

4. It has also been observed in some of those conditions in which the most striking symptoms, anemia and splenomegaly, leave one in doubt as to whether the case should be classed clinically as Banti's disease or a cirrhosis of Hanot's type. Recent studies by Chauffard and Troisier, as well as by Armand-Delille and Feuillé suggest strongly the possible relationship between some so-called splenic anemias and hemolytic jaundice. Attention has also been called to this point by Parkes-Weber.

In other instances the condition may manifest itself under the symptoms of an *icterus gravis* (Roque and Chaliér).

The syndrome is, however, sufficiently definite and easily to be recognized if carefully studied, by the absence of bile in the urine, its presence in the blood serum, the urobilinuria, the presence of a large percentage of granular corpuscles on vital staining, by the fragility of the red corpuscles, especially manifest with the deplasmalized elements, and by the commonly present auto-agglutinative power of the serum.

It is important to remember that in Addisonian anemia and in cholelithiasis the corpuscular resistance is at least normal; indeed, as a rule it appears to be increased. In one of my cases of pernicious anemia hemolysis began at only .325, and was complete at .275 per cent., a greatly increased resistance. In obstructive jaundice Vaquez and Ribierre have also shown that the resistance of the red corpuscles is as a rule distinctly increased, an observation which we have been able to confirm.

*Pathological Anatomy.*—Several individuals presenting the syndrome of hemolytic jaundice have come to necropsy (Vaquez, Giroux and Aubertin; Oettinger; Gandy and Brulé, Widál and Joltrain, Roque and Chaliér; Micheli; Möller; Wilson; Tileston and Griffin). The cases of Vaquez, Giroux and Aubertin, Gandy and Brulé; Wilson, and Tileston and Griffin were apparently of congenital origin—the others, probably acquired. In all cases, however, the essential features appear to have been general evidences of an hemolytic process as manifested by a siderosis of liver, spleen and kidneys. The autopsy in the case of Vaquez and Giroux is of especial interest as it occurred in a congenital case in which death followed splenectomy so that complications with other terminal processes were ruled out. The lesions which have been confirmed in the later cases, were as follows:

A marked congestion of the spleen especially confined to the pulp, the engorgement of which was in rather striking contrast to the relative emptiness of the sinuses. There were few macrophages in the splenic pulp, more in the sinuses. The endothelial cells were stuffed with iron-containing pigment. The liver showed no evidence of biliary obstruction, no angiocholitis. Many of the liver cells, especially in the centrolobular zones, were, however, stuffed with large granules of ochre pigment. There was moderate siderosis of the cells of the convoluted tubules of the kidney, and marked hyperplasia of the marrow.

These observations have been confirmed in all cases which have come to necropsy, affording thus, abundant evidence of the hemolytic character of the process. The siderosis of the kidney which is usually present, has, however, been very moderate in some instances, and, was apparently absent



in Gandy and Brulé's case of congenital hemolytic jaundice, where death occurred in the course of a pneumonia as well as in Micheli's instance of the acquired form of the disease. In no instance was there evidence of biliary obstruction.

*Pathogenesis.*—The pathogenesis of this remarkable syndrome is by no means clear. The evidence of a chronic hemolytic process is not so very different, indeed, from that which one sees in various other conditions, such especially, as Addisonian or bothriocephalus anemia, conditions in which chronic jaundice is not uncommon. The clinical picture in some of the acquired forms of the disease with crises of aggravation of the malady may almost resemble paroxysmal hemoglobinuria. Here, as Donath and Landsteiner have shown, there is in the serum a true auto-hemolysin. But in paroxysmal hemoglobinuria there is no evidence of a diminished resistance of the red blood corpuscles.<sup>2</sup> In Addisonian anemia, as has already been said, the resistance of the red blood corpuscles is usually increased.

On the other hand there is no evidence of a specific hemolysin in these instances of jaundice associated with corpuscular fragility, so that one has been tempted to separate an hemolytic jaundice, such as the jaundice with pernicious anemia or that seen with paroxysmal hemoglobinuria, from the jaundice associated with corpuscular fragility, to which the name hemolytic has come to be applied—a deplorable complication of terms.

This is, however, not to say that the primary causal element in some of the instances of so-called acquired hemolytic jaundice may not be the presence of toxic hemolytic substances in the organism. Indeed, there is some reason to believe that this may be the case. Troisier, for instance, in his recent thesis, advances various arguments in support of the hypothesis that the fragility of the red corpuscles in these cases of hemolytic jaundice is dependent upon the fact that they have already become sensitized by union with an hemolytic amboceptor.

However this may be, we are in the presence of a remarkable clinical syndrome—acholuric, pleiochromic jaundice, anemia, corpuscular fragility, granulation of the red corpuscles on vital staining, post-mortem evidences of blood destruction in the form of siderosis of the liver, spleen and kidneys, absence of evidence of the presence of hemolytic substances in the serum.

Several questions naturally suggest themselves.

1. Where does the hemolysis take place?
2. Where does the bilirubin circulating in the blood find its origin?
3. What is the primary cause of this condition?

1. As to the manner and seat of hemolysis there have been varying opinions. Some (Minkowski, Chauffard, Vaquez) fancy that, gathered in the pulp of the spleen, which, as has been seen, is always markedly engorged, the abnormally fragile corpuscles are there destroyed. Others

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2. It is true that Meyer and Emmerich believe that they have been able to demonstrate a diminished resistance of the red corpuscles in paroxysmal hemoglobinuria against changes of temperature, dilute acids and saponin. Meyer and Emmerich: *Ueber paroxysmale Hemoglobinurie*, Deutsch. Arch. f. klin. Med., Leipsig, 1909, xevi.

(Widal and his pupils) are inclined to believe that the destruction occurs in the general circulation, the debris accumulating as it always does in the spleen, and accounting thus for the symptoms and manifestations on the part of that organ. One observation, as pointed out by Castaigne, is strongly in favor of the circulatory origin of the hemolysis, namely: the siderosis of the kidneys, which is often demonstrable. Otherwise no important evidence can be adduced in support of one or the other of these views, which, in the end, are essentially the same, excepting in so far as they bear upon the second question.

2. The cause of the jaundice: Most observers have believed the jaundice to be immediately hepatic in origin due to the over-production of bile by a liver over-stocked, so to speak, with the products of blood destruction. The old idea that this was, in a sense, after all, an obstructive jaundice owing to the inspissation of the bile and the engorgement of the intra-hepatic bile passages, or to a diffuse intra-hepatic cholangitis, must, however, be abandoned as a result of the clinical and pathological observations of some of these cases. If the hepatic origin of the jaundice be accepted, we must fall back upon the assumption of Minkowski, that the overworked hepatic cell gives off a part of the excess of bile which it produces into the capillaries, as well as into the bile passages.

Widal and his pupils, however, advance another hypothesis, which is in many ways inviting. Pointing out the rapidity with which jaundice follows experimental blood destruction in animals, they call attention to the lack of evidence of any inspissation of the bile, referring especially to one of their patients on whom a cholecystostomy was performed for suspected stone. The gall bladder and ducts were empty, and the bile which was discharged from the fistula in large quantities, was of normal character, and strikingly fluid. On the other hand they observe that Langhans and Quinke have demonstrated bilirubin in the seat of old hemorrhagic foci, that Sabrazès and Muratet have observed the presence of urobilin in cerebrospinal fluid after cerebral hemorrhage, and that Froin has shown that hemoglobin may be changed into biliary pigment in hemorrhagic exudates in the meninges and in the pleura, observations which have been confirmed by Guillain and Troisier, Widal and Joltrain and others. The urobilin which various observers have demonstrated in the serum is believed to be due to a direct transformation from hemoglobin through bilirubin such as has been shown to occur in hemorrhagic exudates. Troisier (Thèse, 1910). They point to the fact that in cases presenting the syndrome of which we have been speaking, despite the long continued jaundice, there is no evidence of the ordinary symptoms of biliary retention, symptoms which they believe to be due to the action of biliary salts, namely: pruritus, bradycardia and emaciation. Bile acids have never been found in blood or urine. Nor do the red corpuscles show the increased size and heightened resistance to hypotonic salt solutions which Rist and Ribadeau-Dumas believe to indicate an acquired tolerance for intoxication by taurocholate of sodium. Everything, they think, points to the existence of a purely pigmentary cholemia

which, theoretically, might easily arise in the blood itself. This is a conceivable and seductive hypothesis. The objections based upon the absence of hemoglobin in the circulation, which have been raised against this idea, are answered by Widal by the assumption of a destruction of the corpuscles so gradual that the quantity of hemoglobin is too small to be recognizable. It cannot be said, however, that the symptoms of ordinary biliary intoxication are never present, rare though they be, for itching has been observed in one or two instances. On the other hand the argument that the absence of these symptoms is evidence of the purely pigmentary character of the jaundice is based upon a false assumption, for King and Stewart have shown that it is, in fact, upon the bile pigment that bradycardia depends.

It is, at the moment, impossible to form a definite opinion upon this question. While all recognize the hemolysis as the remote cause of the jaundice, the majority of observers still cling to a point of view similar to that of Vaquez and Aubertin, which has been well summarized by Chalier. According to this the condition represents "a lesion of the blood of unknown cause terminating in destruction of the red blood corpuscles, in secondary splenic hyperplasia with the formation of an excess of iron-containing pigment and an over-production of bile by the liver as a result of the superabundance of pigment to transform, and, consecutively jaundice." In their own words (Vaquez and Aubertin): ". . . if the primary cause of hemolytic jaundice is in an alteration of the blood, its immediate cause is without doubt an increased functional activity of the liver cell; there may exist indeed, a biliary over-activity of the liver just as there exists a glycogenic overactivity of the liver, and hemolytic icterus would then be an icterus through hepatic overactivity ('ictère par hyper-hépatie')." Their idea as to the manner in which the bile pigment enters the blood is doubtless similar to that expressed by Leuret. "With the blood pigment modified by the spleen the hepatic cell proceeds to produce an excess of bilirubin to a degree such that in certain cases it overflows and secretes bile at both poles: whence hepatogenous icterus"—essentially the idea of Minkowski. The question must be regarded as still open, and there is much that would attract one to the hematogenous hypothesis of Widal, the arguments in favor of this point of view being set forth strongly in the thesis of Troisier.

3. As to the third question, the primary cause of the corpuscular fragility, a positive answer cannot be given. In congenital hemolytic jaundice it has generally been assumed that the fragility of the red blood corpuscles is an inherited defect. The red cell, it might be fancied, has here failed to acquire those powers of resistance which are ordinarily gained in the first days of extra-uterine life, retaining permanently its original fragility. In the acquired forms of the disease the question is however, by no means so simple. Widal, Abrami and Brulé, by intra-peritoneal injections of toluylendiamin, have produced in animals a jaundice with clinical and pathological phenomena similar



to those observed in hemolytic jaundice in the human being. According to the dose, the process is more acute and severe, or slower and more gradual and persisting for a long period after the last injection of the poison. No hemolytic properties could be found in the serum. On the other hand the r. b. c. showed a markedly diminished resistance to hypotonic saline solutions as well as a granulation on vital staining, while evidences of increased marrow activity were striking. The urine in some of these cases, however, contained bile pigment. Obstructive jaundice in animals results neither in anemia, granular corpuscles, nor increased fragility. Indeed, the resistance of the red blood corpuscles is always normal or increased. Here, then, is a similar phenomenon produced primarily by a soluble toxic substance, and while in many instances in the human being, no such cause is apparent, in other cases, such as those occurring in malaria, syphilis and uncinariasis, the primary action of some circulating toxic substance would appear to be certain. It may be, as suggested by Widal, that the marrow, constantly called upon, ends by producing corpuscles less resistant than the normal. But under such circumstances we must fancy that some poisons have acted primarily on blood or marrow. What these may be we know not. The fever associated with paroxysmal aggravations in some cases of acquired hemolytic jaundice is suggestive of an infection.

It is possible then, that the corpuscular fragility as well as the granular corpuscles—the main stigmata of the syndrome, may sometimes be secondary to the action of some circulating toxic substance or substances.

*Treatment.*—Various essays have been made in the treatment of both congenital and acquired hemolytic jaundice. Widal and his pupils have shown clearly that the persistent administration of iron is the one method from which good results may be obtained. In the severe acquired forms rest in bed and the other adjuvants suitable for the treatment of any grave anemia should be adopted. In congenital hemolytic jaundice recovery is unknown, but a temporary improvement in the anemia may be obtained by persistent treatment with iron. In acquired hemolytic jaundice long continued treatment may result in apparent, perhaps, indeed, in complete recovery (Widal, Abrami and Brulé). This is a very important fact when one reflects upon the futility of treatment with iron in Addisonian anemia, a malady which may so closely resemble this syndrome.

The studies, then, of the last several years have brought out a fairly definite clinical syndrome, that of acholuric jaundice associated with splenomegaly and fragility of the red blood corpuscles. In its purest form this group of symptoms is manifested in a sharply defined disease picture, congenital, often familial splenomegalic jaundice. It is probable that many of Gilbert's cases of chronic simple jaundice with splenomegaly as well as of Hayem's infectious splenomegalic jaundice are examples of the disease.

A similar condition is, however, not infrequently met with in adult life. In these so-called acquired cases the symptoms are usually con-

siderably more acute and severe than in the congenital malady. The syndrome has, moreover, been found in a variety of other instances of non-obstructive jaundice associated with various infections or poisons. What the essential primary element in these cases may be, is not at present clear. Most important for the moment is the recognition of those apparently idiopathic examples of acquired hemolytic jaundice simulating pernicious anemia, cholelithiasis, the so-called splenic anemias or indeed, *icterus gravis*; most important because of the fact that the recognition and persistent treatment of some of these cases with iron may bring a great improvement, and perhaps a permanent recovery.

The recognition of this syndrome has opened again, and in an interesting manner, the question as to the possibility of a purely hemato-genous jaundice.

The methods of studying the corpuscular resistance necessary for the diagnosis of such cases are, of course, too delicate for use by the busy practitioner, but they may be carried out easily in any well equipped laboratory. One may hope that a reinvestigation of some of the many instances of non-obstructive jaundice by means of these methods of study may help to shed further light upon an interesting field of medicine.<sup>3</sup>

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## BRIEF REPORT OF WORK DONE AT OTTAWA TENT COLONY WITH SUGGESTIONS FOR IMPROVEMENT

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OTTAWA, ILL.

The Ottawa Tent Colony has been in active operation for six years and a half—a sufficient length of time to demonstrate its usefulness and make a fairly accurate estimate of results accomplished. This communication may be regarded as a report of the work of this institution, together with comments on the general situation of the tuberculosis problem which are of interest and have a direct bearing upon its work. A departure from the conventional method of giving exact historical data, figures, percentages, etc., I trust will be approved as my purpose is simply to present those general facts which it is so essential should be known, and will be more easily grasped and more likely read if not presented in too much detail.

There have been 1,100 cases admitted to the Ottawa Tent Colony during the six years and a half of its existence. Inasmuch as our results have been substantially the same as that of other institutions with the same class of patients, I do not deem it necessary to give exact data, as the purpose of this report is not to exploit our institution, but to illustrate conditions which are general and not peculiar to any locality

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3. For full reference to the literature, see the article by Thayer and Morris on "Two Cases of Congenital Hemolytic Jaundice with Splenomegaly," soon to appear in the Johns Hopkins Hospital Bulletin.

or institution. The net results based upon the conditions of patients two years after leaving the institution are, as nearly as we can determine, between 35 and 40 per cent. of cures. It is not only difficult, but impossible to keep track of patients very long after they leave the institution; hence the time arbitrarily fixed in estimating a cure is two years, which experience proves, is about correct. Since the success of the treatment must be based largely upon the physical condition of the patient on entrance, it is manifestly unfair to include in any estimate far-advanced cases in which the results are so meager as to amount to practically nothing. By excluding this class of cases, the results could be doubled. A fairer method upon which to report results is on a classified basis of the physical condition on entrance—incipient, advanced and far-advanced. The results in the incipient class are about 90 per cent.; in the advanced about 50 per cent.; far-advanced 1 or 2 per cent.

In addition to the usual hygienic-dietetic methods, we have administered tuberculin consistently and conscientiously during the past four years. At first Wright's opsonic method was used, the opsonic index being used as a control in dosage, but this method was found unnecessary and impractical because of the immense amount of work and for some time we have followed the clinical methods of Trudeau, Koch, and Denys. The latter method is much less laborious, and as we believe, more scientific. Tuberculin has been administered in a large number of afebrile cases in good nutrition and the results are gratifying. Denys' bouillon filtrate has been found to be especially efficacious in cases of rapid pulse. Statistics of cases treated with tuberculin are now being compiled and will be presented in a separate report.

Cases showing irregular temperature, leukocytosis, excessive expectoration, and other symptoms generally attributed to mixed infection have been treated with autogenous vaccine made from the pyogenic organisms isolated from each case. In some cases mixed vaccines were used. In others the organisms were isolated in pure culture. The exact value of autogenous vaccines against mixed infection has not yet been determined. As in tuberculin treatment, the immediate results are not marked; and it is only by the comparison of a large number of cases treated with and without vaccine that logical deductions can be made. However, it has been found that the number of hemorrhages occurring in the group treated with vaccine prepared from the organisms of mixed infection is considerably less than the number occurring in the cases not so treated. On the whole, we are convinced that vaccine therapy is a valuable aid to the hygienic-dietetic treatment.

The general principles of treatment, and to some extent the methods, are now so well understood as to make it unnecessary to consume time or space in presenting them. The difficulties which arise in their application, however, are not so well understood, and these I shall attempt to set forth in some detail.

At the inception of this work we were confronted by that hopeless apathy which had hitherto characterized our attitude toward tuberculosis; also a very general skepticism both in and out of the profession as to its



curability in this climate. I think it is fair to assume that public and professional opinion has changed on this question to such an extent that now it is generally conceded that tuberculosis can be cured practically anywhere. The essentials so far as climate is concerned being simply fresh air. This change of sentiment has been brought about in a comparatively short time when we take into account the magnitude of the problem, and the time-honored opinions and convictions which had to be overcome. Now that former prejudices to a great extent have been overcome we are entering upon an era of constructive work.

I will not attempt the consideration of the tuberculosis problem in general, but confine myself more particularly to those considerations which effect its treatment.

It is conceded by those who are at all familiar with the treatment of tuberculosis that it can only be said to be curable, as applied to a large majority of cases, in its early stages. One of the greatest obstacles to successful treatment is the fact that not only the Ottawa Tent Colony, but other institutions, are being compelled to admit many patients that are well beyond the incipient stage. This is due to the fact that neither the profession or the public are sufficiently well informed as to the early symptoms of tuberculosis to recognize it in its early stages. As a rule the family physician does not see the patient until the disease is well advanced, and it must be confessed that in many instances he does not recognize the early symptoms even when the opportunity offers, because he is not alert, or well informed, but worse than all, many physicians have not the courage to inform a patient as to the nature of his trouble even when they do recognize it. The conscientious and well informed physician who makes an early diagnosis is almost invariably placed on the defensive, and where he is not, finds it extremely difficult to secure the co-operation of the patient and his friends in carrying out his directions. It too frequently occurs that in an effort to spare the feelings of the patient, the diagnosis is covered up under such indefinite and meaningless terms as "chronic bronchitis," "slight lung trouble," "grippe," "catarrh," "cold," etc. We should be honest with our patient. If he is tubercular, tell him so, and show him how he can be cured, and how he can spare others. Were tuberculosis, like inoperable carcinoma, an absolutely hopeless condition, then we would be justified in concealing our diagnosis, but it is curable, and the only way to cure it is to have the patient's assistance. This is never possible when he does not realize his condition. Ignorance alone is responsible for the terrible dread which most people have for consumption. No effort should be spared in impressing upon the minds of our patients that whereas two-thirds of all people have, some time in their lives, had tuberculosis, only one-seventh of all deaths are due to this disease. Furthermore, we should be candid with our patients for the reason that we have the welfare of his family and immediate friends in our hands, and not to recognize this responsibility is little short of criminal. How often in a home where tuberculosis has been lurking for months, do we find innocent members of the family exposed, because of our failure to be frank and honest with our

patient. In a leading city in an adjoining state a recent investigation shows that in many cases tuberculous patients had consulted from as many as three to eight physicians before they had been told frankly that they were suffering from tuberculosis. What we are pleased to call "tact and discretion" in sparing the tubercular patient's feelings are in fact injustice and crime, and the sooner we adopt absolute candor in dealing with our cases so much sooner will the ravages of tuberculosis diminish.

The difficulty from the standpoint of the sanatorium physician is that he is compelled to accept a majority of advanced and far-advanced cases which makes successful treatment doubtful even under the most favorable circumstances, but to add to the difficulty of the situation he finds his patients coming to the institution badly advised, and with many misconceptions as to the necessary conditions of treatment, and the time essential to effect a cure. Unfortunately the family physician and the sanatorium physician, by reason of their different relations to the patient, view the situation from different standpoints, hence there is a tendency for one to be critical of the work of the other because of the failure of each to understand the difficulties which confront the other.

The family physician has not discharged his full duty to a patient when he recommends him to the sanatorium for treatment. Much of the success of institutional treatment depends upon the attitude of the patient toward the institution, and this in turn depends very largely upon the advice given him by his family physician. There is nothing more confusing or disastrous to the patient than to find that the advice and information which he receives in the sanatorium, differs very materially from that given him by his physician. This causes him to doubt, and results in an uncertainty as to his plans, which makes him restless under the necessary restraints of treatment. Inasmuch as confidence is essential to success, where there is discrepancy in the advice given him by his family physician, and that in the sanatorium, he will usually place his confidence in the family physician for two reasons. First, because he is better acquainted with him. Second, it is usual for the family physician, in order to get the patient to accept the sanatorium, to minimize the conditions as to time, expense, etc., and withhold other information which the patient should have in planning so important a campaign, and he will invariably take the advice of the physician who plans the easiest campaign.

The family physician should realize that he assumes as great a responsibility in advising a patient to go to a sanatorium as he does in treating him, hence he should be careful not to give him any information which is likely to be contrary to that which he will receive in the institution, for by so doing the patient is confused, the family physician may be discredited, and the sanatorium physician certainly embarrassed, no matter how earnestly or intelligently he may endeavor to reconcile the differences in the mind of the patient. It is a serious mistake for the family physician to minimize the extent of the disease or the time necessary to effect a cure. The patient must be made to face the issue

squarely, as he usually will when properly presented. It is a very serious mistake for the family physician to minimize or withhold the facts with a view to making it easier for the patient by having these facts gradually revealed to him. It is very natural to shrink from infliction of the terrible mental shock which almost always accompanies a diagnosis of tuberculosis and that overwhelming sense of despair which we so often witness. We are tempted to either withhold the information or minimize it for the protection of our own feelings as well as those of our patient. This, however, is no reason why we should not do our duty, especially in view of the fact that it is only by so doing that we can protect our patients from disaster. Then, too, we have this consolation that after the first burst of grief and despair which usually comes to the patient when first informed as to his condition "he pulls himself together" and is ready to begin a fight for his life. It is just at this period when the family physician can be of greatest service to his patient, for upon his skillful advice the fate of his patient very largely depends. The mental condition of the patient can be made no worse by informing him as to the conditions of treatment no matter how hard these may seem to be. In fact this is just the period when he is most ready to accept the situation without reference to its difficulties. This is the time to prepare him for his campaign, and his success will depend upon how skillfully this is planned.

The treatment of tuberculosis in the home is well nigh impossible. Here and there one is cured, but these are the rare exceptions to the rule. No one appreciates this fact more than the sanatorium physician for he finds it difficult enough to get results even under the most favorable conditions. He knows better than the general practitioner that it is the patient that is the problem and not his disease.

The treatment of tuberculosis from the physical side is comparatively easy and clearly indicated. Its application is quite a different and far more difficult matter because the patient and his environment form the problem and not his disease.

The general practitioner usually approaches the treatment from the physical side. He assumes that his patient has an intelligent appreciation of his danger, that all that is necessary is to give directions as he would in an ordinary case of acute illness and they will be carried out. He fails to make the distinction between a patient suffering from an acute illness whose pain and helplessness compels him to accept a situation, however disagreeable, and the patient suffering from a chronic disease wherein the symptoms during the curable stage at least are all of so mild a character that it is difficult to make either the patient or his friends believe he is afflicted with a disease which is fatal unless its course is arrested. The tuberculous patient not only does not suffer, but he usually has sufficient strength to carry out his own desires, little realizing that every injudicious act hastens the fatal result. The only way to get the average patient to do the things which make for recovery is to have him under constant surveillance, and even then frequent appeals must be made to him in order to get him to do anywhere near right.



Comparatively few patients have a realizing sense of their danger, hence they must be coaxed and encouraged, reasoned with, given sympathy (not coddling), sometimes disciplined, and always controlled. They must be protected from the thousand and one temptations of life with which they are constantly assailed in the home and to which they so easily yield. These are the principle reasons why it is so necessary to get the patient away from home, home influences, and particularly home coddling and sympathy. No matter how much we may theorize or how plausible the reasons assigned, the fact remains that in practice, the home treatment is a failure except with the occasional patient of strong character, and unusually good environment. The conduct of the uncontrolled patient is as erratic and uncertain as the alcoholic or drug fiend, who in attempting to reform is left to his own resources. Good resolutions vanish, and plausible reasons given by the patient why he can do this, that, or the other thing safely which the experienced physician knows are dangerous. There is probably no disease, the treatment of which makes such over-draughts upon the nervous force and energy of the physician as in the treatment of tuberculosis. He is in a constant state of trepidation because of the fear of consequences from the things done, or anticipated, by his patients, that is exhausting in the extreme. This is why the personality of the physician counts so much for success in the treatment of this disease, and those who do not recognize the necessity for this unusual care and solicitude make a failure of institutional care, just as the family physician does for reasons which are beyond his control.

Where the patient is amenable to control it not infrequently occurs that the inevitable worry, solicitude, and well-meant but injudicious advice of the family and friends thwart the best directed efforts of the physician and his patient. The patient who succeeds in carrying out the treatment successfully in the home is fortunate indeed, but his success is disastrous to the multitudes who, inspired by his example, make the attempt and fail, hence in the interest of the many it is unfortunate, since more cannot be cured, that any are successful.

The successful treatment of tuberculosis as applied to a large majority of cases can only be accomplished by removing the patient from the temptations of the home, business, and friends, and the sooner this fact is recognized, the better will be our results. The usual argument in favor of home treatment is that because of the meager sanatorium accommodations, and the poverty of the majority of the sufferers, treatment must be carried out in the home or not at all. This is unfortunately true, and the argument would have more weight were it not that the plan is so uniformly unsuccessful. A more rational plan is to meet the situation squarely by providing sanatoria for all. The failure in the home has a decided tendency to discredit the treatment and emphasizes the necessity for greater sanatorium facilities. It is unfortunately true that the modern treatment of tuberculosis can only be successfully applied with any great degree of success in sanatoria, hence we should devote our energies to making institutional provision for all classes of cases.

Walters of England, who has had large experience in home and sanatorium practice says: "I have been sometimes tempted to regard outpatient treatment of consumptives as sheer waste of time. Turning to a different class I have a fairly large and increasing list who have undergone sanatorium treatment during the last five years and remain well and at work: whereas I scarcely remember a single instance of recovery under treatment at home. I have met with several cases in which open air treatment was attempted at home previously to admission to the sanatorium and have been struck with the difference in results. Such patients freely confess after a few weeks sanatorium treatment they had unintentionally wasted the time at home, that home treatment was quite a different thing owing to the difficulties imposed by their surroundings, and that less progress was made in months at home than in weeks at the sanatorium. I have also had most flattering letters from medical men testifying to the educational value of the sanatorium treatment, and this is not the least of the advantages conferred."

In addition to the temptations inseparable from the home another important factor in favor of the sanatorium is the effect of the example of other patients, and that *esprit de corps* which is developed among them, and both of which are powerful factors. However intelligent and purposeful, determined and obedient, the patient may be, he will advance much more rapidly in having the stimulus which is obtained from life with other patients who like himself are seeking to recover health and whose example will constantly urge him on toward the proper life. All who have handled many patients together know the great assistance which is obtained from the rivalry between them in taking the cure faithfully: the brace to the weak from the example of others: the encouragement to the discouraged that is incurred by the good results in other cases: the mutual assistance and the good spirits which animate them all.

Of the many obstacles to the successful application of the treatment of tuberculosis not the least is in meeting the necessary expenses of treatment. When sanatorium treatment is suggested, we are often met with the objection that the patient is not able to meet the expense. This unfortunately is too true in many cases. However, there is no escape from the financial burden of tuberculosis no matter which way we turn. It must be borne in either one of two ways—in care or cure. "Care for the consumptive in the right place, in the right way, and at the right time until he is cured; instead of as now, in the wrong place, in the wrong way, and at the wrong time, until he is dead." Fortunately the cure is the least expensive, but thus far we have failed to see it. It is a lamentable fact that there is as much money being spent in the care of tuberculosis as would be necessary to cure those afflicted if it were spent at the right time and in the right way. This is a fact which is not fully appreciated, and in every case presented to us the financial situation of our patient should be carefully canvassed in attempting to advise him. From three to five hundred dollars will usually suffice to cure the curable case, or at least to make him self-supporting. It will usually cost con-

siderably more than this to care for him during the months, or even years of his illness, to say nothing of the loss of his own time and that of other members of the family who are compelled to give up their employment in order to care for the invalid; hence inasmuch as the expense must be borne and there is no escape from it, where the patient may fairly be regarded as curable, he and his friends should be made to understand that a cure is usually less expensive than care. The resourceful physician can often be of greater service by his advice in this particular than in any other way.

The word "cure" is often loosely used, thus giving rise to wrong impressions. Inasmuch as the active symptoms are more largely due to a mixed infection than to the tubercle bacilli, and this disappears under favorable conditions rather promptly, the patient and even his physician is apt to overrate the permanency of the results, and underrate the difficulties of completing a real cure. When we have overcome the mixed infection, the patient may have the appearance of health, but as a matter of fact he is not well, but simply placed in a condition where the cure of his tuberculosis is only fairly begun. This is a fact that is not appreciated, and every such failure is unjustly charged up to the defects of sanatorium methods. While it is true that tuberculosis is *easily* cured, it is also true that it is never *quickly* cured, and the more fully this fact is appreciated, the better it will be for the reputation of the physician, and the welfare of his patient. In the treatment of tuberculosis like every other enterprise the results are in proportion to the investment. Experience the world over proves that at least six months of sanatorium treatment is required to produce substantial results in the majority of cases, and that while a considerable number do succeed in a shorter residence, such a course is attended with much risk and many failures, which, but for the attempt to take a short cut, would have recovered. Unfortunately many patients for financial reasons, cannot remain long enough to effect a cure. It is fair to say that some treatment is better than no treatment, and not infrequently is successful, but such risks should not be assumed where possible to avoid them, and no patient, whatever his circumstances, should be left in ignorance of this fact.

A prognosis in tuberculosis should not be made too confidently. The family physician who recommends a patient to go to a sanatorium may truthfully say, "I cannot possibly promise that treatment there will cure you, but I can honestly tell you that in this way you will be giving yourself the best chance of battling with the disease successfully." The advantages of sanatorium treatment are that it affords the tuberculous invalid the most practical, indeed, *the only systematic* method of fighting his disease, and acquiring hygienic living in its prevention. It is a most valuable educational factor, not only in the immediate locality in which it is located, but to a very great extent in the community at large; it has a definite and important place which can scarcely otherwise be filled in the study and investigation of the disease and its complications. In these three relationships then, the sanatorium possesses a scope and value of vital importance in the present great anti-tuberculosis movement, and



whatever the future may have in store for it the sanatorium must always hold a place, and a vitally important one, in this great movement. The sanatorium is as essential as the general hospital, and for substantially the same reasons.

Often when tuberculosis is diagnosticated, the patient is ordered to the country or the mountains, or at least to make some change; and as a rule in these early cases the patient improves. Often the disease quiets down and the patient resumes his work. This has been accomplished by the sacrifice of a little time and at a comparatively small expense.

Why not recommend this change then instead of institutional treatment? Let the after history of cases treated in the two ways tell. Tuberculosis is a disease which heals slowly. This so-called recovery of health which follows change is often only apparent. It takes months to get well of incipient tuberculosis. The patient who simply makes a change of surroundings has only the change and rest from which to derive his benefit. He returns to work, knowing nothing of his disease or the things which are necessary to retain the health to which he has been apparently restored. On the other hand, the individual who has been treated in a thoroughly equipped institution has the benefit of the rest and change. He has appropriate food, the proper amount of rest and exercise, a thorough enforcement of the fresh air principle, and besides, has the advantage of all active measures which science knows to be of value. He returns to work after a few months when all active symptoms have disappeared, but he well understands that it will take a year or two to make the cure permanent. He is educated in the care of himself and thus prevents a relapse, while the individual who has simply made a change sooner or later is apt to break down again. His apparent saving has been a loss, and with it perhaps has come the loss of health and life as well. How much better would a little wholesome rational advice have been? The cure of tuberculosis must be based upon common sense.

If tuberculosis is ever to be mastered, it must come through early diagnosis and immediate, energetic, rational treatment. To attain this end, the earnest co-operation of the entire medical profession is required.

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## WHAT ARE YOU GOING TO DO ABOUT IT?

E. W. FIEGENBAUM, M.D.

EDWARDSVILLE, ILL.

Through the wonderful discovery of arseno-benzol, or No. "606," by Dr. Paul Ehrlich of Frankfort, the attention of the profession has very recently and very forcibly been called to the venereal diseases, and the entire medical world is watching with bated breath, hoping that at last a remedy has been found powerful enough to cope with this most awful condition. I need not tell you of the ravages of this kind of diseases, but merely call your attention to the statement that the annual death-

roll of syphilis and gonorrhea, and their results, exceeds that of all the contagious diseases combined. Acting on the time-honored principle of our profession to prevent the extension of diseases in any direction, it is small wonder that we are groping about for an instrument that will help us to combat this most stubborn enemy. Thousands are annually going to premature graves and multiplied thousands are living lives worse than death, solely on account of the ravages produced by specific diseases.

I am not going to tell you about "606"; neither am I going to speak of the Wassermann test, nor try to describe this condition in any of its phases. This paper is presented to call your attention to the vast army of men, women and children, cursed with specific diseases, and the results thereof, through no fault of their own. Here and now a plea is being made for the innocent victims of diseases contracted by vice and debauchery, the "sins of the fathers visited on the children even unto the third and fourth generations."

Dr. Rainey of Salem, Ill., president of the Southern Illinois Medical Society, at the annual meeting in 1909 read a paper on "The Home Beautiful" which so impressed me that I have been unable to get away from it. He gave a description of a home, clean and pure, happy, healthy children, peace and goodwill, picturing an ideal condition of an American home, a home in which the great curse of venereal disease had never entered; a most alluring picture notwithstanding the fact that the financial means of the family were limited. But what does it profit us to raise that kind of a family, when the boys and girls of that family are daily exposed to contract vile diseases, and through no fault of their own? Dr. Rainey in his paper used this sentence: "Suppose a young man knocks at the portal of your home, asking for your daughter's hand. She is pure and bright as the dew from heaven as it receives its first kiss from the morning sun. This young man may have all the outward appearances of a perfect gentleman, but an acquired sufferer of the great social plague. It would be better that he be knocking at the portals of hell for admission than asking the hand of your daughter to make life miserable for her the rest of her days, and her children born to them." That is all very true, but this same respectable looking gentleman refuses to knock at the doors of hell, and persists in knocking at your door and my door, and keeps on knocking until he places your daughter behind the doors of hell, to which the precious son-in-law ought to have been consigned long ago. Allow me to read out of my case book.

A banker's daughter, the idolized child of fond and indulgent parents. The family was of the very best in the community, honored and respected by every one. This girl not only shared the general popularity of the family, but was deservedly popular and much sought after on her own account. Her character was above reproach, she was an active worker in all the Christian movements in her village, full of good deeds and noble impulses. These very attributes attracted marked attention, and among the rest came one of these highly respectable looking young

men, with all the outward appearances of a gentleman but inwardly rotten to the core. This beast, although he knew that he was afflicted with gonorrhea, laid siege to the heart and hand of this beautiful character, and knowing that he was still in an unfit condition, married her. Amid the plaudits and congratulations of numerous relatives and friends, prodigal with best wishes and bright forecasts for the future of the young people, the newly wedded pair left the home where she had been sheltered with idolatrous love for twenty years. From that moment she was doomed, for it only took a few months to show that she had become infected with the dread disease. At the same time we knew that another crime would be laid at the door of this man, for the little unborn babe, not finding sufficient sustenance to maintain life, slipped away before its time, adding a mute protest against the sins of the father. Not long after, with a view of staying the disease, the tube and ovary of the left side were removed. This proved only a makeshift and the operation for the removal of all the organs of reproduction was undertaken and carried out. Unsexed, maimed, mutilated, she still lives with every movement a pain and every breath a groan. Is this an overdrawn picture? Who is next? Is it your daughter or my daughter?

A young lady of one of the best families of Topeka, Kansas, returned from a vacation visit to friends in the interior of the state. An ulcer of a peculiar nature was seen on her lip which, on investigation, was found to be syphilitic. Thorough investigation of the origin of this ulcer was undertaken, which disclosed the fact that the sore was contracted by using the common drinking cup on the Pullman. You see, all the hogs do not ride on cattle trains. This case was brought to the attention of the legislature, and a law was enacted abolishing the common drinking cup on all the trains that operate in that state. Oklahoma has a similar law, and it would be a step in the right direction if this precaution could be made national.

The census of 1900 elicited the fact that there were in the United States 66,000 blind persons, fully 33 per cent. of whom became blind when less than a year old. We know that ophthalmia neonatorum is the fruitful source of infantile blindness, and that its most frequent origin is in the virus of gonorrhea implanted in the eye at the very moment of birth. Just think of this vast army of over 20,000 children doomed to a life of eternal darkness all on account of an infamous disease bequeathed to them by heartless parents.

We are all justly proud of our public school system, that great bulwark of American liberty, and yet has it ever occurred to you that our children are daily exposed to this damnable disease while in attendance at school? Dr. Ira C. Wile of New York, in a paper published in the *New York Medical Journal*, Sept. 10, 1910, gives a most horrible account of conditions as they exist in our public schools, and calls attention to the fact that most strenuous measures ought to be taken to prevent the spread of venereal diseases among our school children. He says that 20 per cent. of all venereal diseases is acquired before the twenty-first birthday, and that syphilis and gonorrhea, generally accidentally acquired,



is not infrequent in children between the ages of 4 and 16 years. The various methods of acquiring these diseases, accidentally and innocently, are summed up by Wile as: by fondling, kissing, using infected glasses and infected eating-utensils, from the use of the common towels, pencils and sponges, etc. Occasionally there was more direct contact, as by exchanging chewing gum, interchange of mouth toys, and sexual contact.

This is either true or not true. If the conditions have been misrepresented that fact ought to be ascertained and denial of the above statements published far and wide. But what if all the above statements are true? Our duty is plain. Every member of the society, every member of the profession ought to constitute himself a committee of one, to right this most grievous wrong, to become a defender of the innocent victims of this infamous disease. In his own village, town or city or wherever he may find himself he ought to put up the best fight there is in him against this condition. We as medical men must take the initiative; nay, more, we must be constantly on the firing line, for if we do not take up the gage of battle to remedy this great evil, there will be no battle. The world looks to us in these sanitary and hygienic matters and in behalf of this great army of innocents. I bespeak your most earnest, your most effective efforts. We cannot shut our eyes to this condition that no one knows better than we. The spectre will not down; we must face it; then let us face it like men. Conditions are getting no better very fast. Dr. Wile, quoting from Dr. Morrow, states that it is a conservative estimate that in this country the morbidity of gonorrhea would represent 60 per cent. of the adult male population, and that of syphilis from 10 to 15 per cent. In other words this means that three out of every four men you see walking on our streets are victims of the great black plague. Dr. Morrow makes the statement that in France 20,000 children die of syphilis each year. The Southern Illinois Medical Society at its annual meeting in 1909 passed a resolution to ask our legislature to pass a bill requiring candidates for matrimony to furnish a certificate of health before a license could be issued. One of our local newspapers had considerable fun over this act, called the idea utopian, said that we were at least fifty years ahead of the times, etc. Still, in the face of all this, our sister state Indiana has passed just such a bill, which has been a law for five years, requiring the bride and bridegroom to be examined by a physician who must certify that the candidates for matrimony are not afflicted with any contagious or infectious disease. Then and only then a license can issue. This proves that the idea is not so utopian after all, and that there are others in the profession who think along these lines. An effort will be made to introduce and pass a bill along these lines in the next legislature, and every physician in this state ought to aid this movement with all of his efforts and all of his influence, to bring about this much desired result. When this opportunity offers will you be active or passive? In other words, what are you going to do about it?

# ILLINOIS MEDICAL JOURNAL

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FEBRUARY, 1911

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## THE EXAMINATION OF APPLICANTS FOR LICENSE TO PRACTICE MEDICINE AND SURGERY IN ILLINOIS

### SECOND ARTICLE

The discussion regarding standards of admission to practice continues. The Sunday edition of the *Chicago Tribune* has recently contained contributions regarding the education of medical men, dentists and lawyers. All of these have contained references to the low standards of admission and fake schools. Curiously enough Dean Henry M. Bates of the Michigan University Law School, declares that his profession lags disgracefully behind the profession of medicine when it comes to the standard of admission. This may be true in Michigan where the medical department of the university has such a paramount influence and where we are informed the State Board of Medical Examiners has always been effective and honest. So much of what Dean Bates says about the overcrowding of the legal profession and the unpreparedness of the young lawyers, applies to the medical profession, that we give his statement in full.

"The profession of the law is undoubtedly crowded, and perhaps overcrowded, though probably not more so than other long established occupations. Statistical data as to this subject are not wholly enlighten-

ing, especially in the efforts to determine whether 'the law' is more crowded than are other vocations, or whether it is now more crowded than formerly; for the obvious reason that such data can take no account of and throw no light upon the questions as to how many lawyers or doctors or bankers are needed to serve, say, 1,000 persons, or whether as many or more are needed to do the business to-day of 1,000 persons as to do the business of past periods.

"However, there can be no doubt but that lawyers are so numerous as to make competition among them distressingly keen and to make it extremely difficult for the young lawyer to secure a good foothold. On the other hand, the rewards to those eminently successful are, I believe, much greater to-day than at any other time in the history of the profession. Moreover, there are still many places, usually the smaller communities, to be sure, where there are still not enough lawyers. Within a few days I have had several letters from business men in different parts of the country asking me to recommend to them some lawyer to fill a need felt in the indicated community.

"This real trouble in my judgment is that there are too many 'half-baked' lawyers, but not enough men well prepared to practice their profession. The young man of good ability and character, scientifically trained for the law, need have no fears. It is the large number of men of poor ability, superficial training, and unstable character who face a hand to mouth existence. Unfortunately, moreover, these men make trouble not only for themselves and their clients, but they lower the standards of living, and in some cases, of professional conduct for other and better lawyers.

"The remedy is to be found in higher standards of admission to the bar. In this respect our profession lags disgracefully behind that of medicine. I think I am correct in saying that in every state of the Union but one, no man can even take the examinations for a license to practice medicine unless he is a graduate of a 'reputable medical school.' In not a single state is there a corresponding requirement as to law. Moreover the medical profession has seen to it that a 'reputable medical college' is defined in all states as one having a four-years course, with at least stated facilities and adequate faculties; and in several states to be deemed such a medical school, an institution must require of matriculants that they shall have in addition to a high school course at least one year of college work. There is nothing approaching this in requirements for admission to the bar.

"Great as has been the improvement during the last decade or two, the requirements in many states are scandalously low. Little is demanded, and even in administering these insufficient requirements many boards of examiners lack the time, inclination, and training adequately to perform their duties.

"While the situation in law and medicine is in many respects quite different, still it is submitted that reasonably high standards are quite as important in the former as in the latter profession. Not only is there the individual aspect of the case, that the lawyer is often the



guardian of the property, reputation, and life of his client, but lawyers make the judges and a very large proportion of the legislators and executive officers, so that the character of the administration of justice, the quality of our legislation, and the enforcement of law depends upon them.

"Much of the widespread criticism of our profession can certainly be attributed to faults traceable to the free and easy way in which almost any one may be admitted to the bar. It is high time that our ancient and honorable profession were bestirring itself in this matter."

Several errors appeared in our article on this subject in the January JOURNAL and additional facts were discovered too late to be inserted in that issue. We therefore give below first the table printed in an appendix to the 20th Annual Report of the Illinois State Board of Health, page xxix, and purporting to show the results of the examinations held by the Illinois State Board of Health from 1877 to date. There is a hiatus of six months, from January 1, 1899, to July, 1899, which might be supplied to make this table chronologically complete. We have reason to believe that this table is not absolutely correct, but such as it is we print it hoping to secure at some time a correct report.

Our readers will be interested to note that the average percentage of rejections of non-graduates was for 21 years, 66.7 running from 41.7 to 100. Dr. Egan entered the office about May 1, 1897. It is also interesting to note that during the next year (1898) more applications (46) were received from non-graduates than had been received in any year for 17 years, and that the percentage of rejections fell from an average of 66.7 to 23.9.

2d. The figures to complete the second table comprising the period from July 1, 1899, to December 31, 1901, were obtained from the volume entitled "Official List of Legally Qualified Physicians of the State of Illinois, March, 1902, published by the State Board of Health," page xxi. There is nothing in this table to indicate that any applicant appearing for examination during these eighteen months failed to secure a certificate. The law of 1899 went into effect July 1st and required that all applicants for license to practice in Illinois must submit to an examination by the board. Combining the reports of all examinations from all possible sources since July 1, 1899, we find that approximately 7,303 were examined; that the number rejected was 595; and the percentage of rejections was 8.14 per cent. The percentage of rejections from July 1, 1899 to January 1, 1908, was 4.6 per cent. The percentage of rejections for the years 1908, 1909 and 1910, or during which there has been frequent criticism of the laxity of the board's examinations, has been 16.4 per cent. Had this higher percentage prevailed during the entire period from 1899 to 1908, there would have been 603 fewer certificates issued by the board. Had the lower percentage prevailed during the past three years, there would have been 246 more licenses granted than the board appears to have given. To this extent then the agitation on the part of the professional organizations has done good.

## NON-GRADUATE EXAMINATIONS

July 1, 1877, to June 30, 1898

Year	Applicants	Licensed	Rejected	% Rejection
1877-78 .....	477	150	327	68.6
1879 .....	73	22	51	69.6
1880 .....	70	23	47	67.2
1881 .....	27	13	14	51.9
1882 .....	16	7	9	56.3
1883 .....	18	..	18	100.
1884 .....	13	2	11	84.7
1885 .....	9	5	4	55.6
1886 .....	13	6	7	57.9
1887 .....	7	3	4	57.1
1888 .....	12	7	5	41.7
1889 .....	10	5	5	50.
1890 .....	6	3	3	50.
1891 .....	13	7	6	46.2
1892 .....	14	3	11	76.6
1893 .....	11	2	9	81.9
1894 .....	34	14	20	58.8
1895 .....	35	13	22	62.9
1896 .....	36	14	22	61.1
1897 .....	41	12	29	70.7
	935	311	624	66.7
1898 .....	46	35	11	23.9

EXAMINATIONS UNDER THE LAW OF 1899 WHICH REQUIRES THE EX-  
AMINATION OF ALL APPLICANTS FOR LICENSE TO PRACTICE  
IN ILLINOIS

Year	Applicants	Licensed	Rejected	% Rejection
July, 1899, to Dec.,				
31, 1901 .....	930	930	0	0.
1902 .....	589	576	13	2.2
1903 .....	594	559	35	5.9
1904 .....	762	728	34	4.5
1905 .....	804	759	35	4.4
1905 .....	817	748	69	8.4
1907 .....	638	580	52	8.2
1908 .....	754	640	108	14.5
1909 .....	786	645	135	17.3
1910 .....	629	507	114	18.1
	7,303	6,672	595	8.14

## SENATE BILL NO. 32

Introduced by Mr. Beal, Jan. 17, 1911.

Read first time, ordered printed and referred to Committee on Judiciary.

## A BILL

For an Act to amend the laws in relation to marriages, and requiring a doctor's certificate of health as a condition precedent to obtaining a license to marry, and providing a penalty for fraudulently issuing of such certificate. (Approved Feb. 7, 1874; in force July 1, 1874.)

SECTION 1. Be it enacted by the People of the State of Illinois, represented in the General Assembly: That hereafter marriages between parents and children, including grandparents and grandchildren of every degree, between brothers and sisters of the half as well as of the whole blood, between uncles and nieces, aunts and nephews, and between cousins of the first degree, are declared to be incestuous and void. This section shall extend to illegitimate, as well as legitimate.

SEC. 5. No license to marry shall be issued except upon a written and verified application. Such application shall contain a statement of the full Christian and surnames, color, occupation, birthplace, residence, ages of the parties, whether the marriage contemplated is the first, second or other marriage, together with the full Christian and surnames, residences, color, occupation and birthplace of their parents, including the maiden name of the mother; and such application shall further state under oath whether either of the parties is an imbecile, epileptic, of unsound mind, or under conservatorship, and whether either applicant is or has been within five years an inmate of any insane asylum or poor-house, and whether either of the contracting parties is afflicted with tuberculosis, syphilis or other transmissible diseases, and such application shall be accompanied by a certificate of a reputable practicing physician that the parties contemplating marriage are in sound bodily health, and free from any recognizable indications of transmissible disease; and no such license shall be issued if it shall appear from such certificate, or otherwise, that either of the parties is deficient in any of the requirements enumerated in this section.

SEC. 6. If any applicant for such doctor's certificate shall have been refused such certificate by any regular practicing physician, on account of such applicant suffering from any of the above enumerated diseases, he shall so state, and it shall then be the duty of the county clerk or such other officer whose duty it is to issue marriage licenses, to cause said applicant to be examined by three practicing physicians, and a certificate signed by two of said physicians certifying that said applicant is free from any of said diseases, shall be necessary before such license shall issue.

#### SENATE BILL NO. 5

Introduced by Mr. Glackin, Jan. 4, 1911.

Read first time, order printed and referred to Committee on Appropriations when formed

#### A BILL

For an Act to provide for the location, erection, organization and management of a state sanatorium for persons afflicted with tuberculosis, etc.

(An appropriation of \$300,000 is called for to carry out the provision of this bill.)

#### SENATE BILL NO. 51

Introduced by Mr. Glackin, Jan. 18, 1911.

Read first time, ordered printed and referred to Committee on Railroads and Warehouses.



## A BILL

For an Act providing for the licensing, regulation and inspection of cold storage warehouses and regulating the sale of articles of food stuffs stored therein, or in any cold storage warehouse.

SEC. 2. ....Such application shall be accompanied by a report or certificate, from the commissioner of health of any city or village where such officer may exist, and in such cities and villages having no commissioner of health or any officer performing the duties of such commissioner, then such application shall be accompanied by a certificate or report from the State Board of Health, stating whether the place in which such applicant proposes to carry on such business is in a sanitary condition and is a fit place in which to carry on such business. If such report shall be to the effect that such place is a fit place and in a sanitary condition in which to carry on said business the Mayor or President of the Board of Trustees shall cause to be issued to such applicant a license authorizing such applicant to carry on the said business for and during the period for which said license shall be issued upon payment by such applicant to the proper authorities of any such incorporated city or village of a license fee of five hundred dollars (\$500) annually, and the filing of a bond running to the incorporated city or village as the case may be, with at least two sureties to be approved by the Mayor or President of the Board of Trustees in the sum of ten thousand dollars (\$10,000), conditioned that such licensed person or corporation shall faithfully observe and obey all laws of the State of Illinois and the ordinances of such incorporated city or village, as the case may be, now in force or which may hereafter be passed with reference to such business.

(The Vital Statistics bill has also been introduced but it is not yet out of the hands of the printer.)

L. C. TAYLOR,

Chairman, Legislative Committee.

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## PRESIDENTIAL ADDRESSES BEFORE THE ST. LOUIS MEDICAL SOCIETY

At the recent annual meeting of the St. Louis, Mo., Medical Society, short addresses were made by the retiring president, Dr. Henry Schwarz, and the incoming president, Dr. Robert E. Schleuter, which we consider worthy of remark. It will be remembered that the St. Louis Medical Society, to the great gratification of the friends of Medical Organization in the West, acquitted itself nobly in entertaining the American Medical Association, at its 1910 meeting. Dr. Schwarz, the then president of the society, was the Major General in command, and much of the success of the great meeting was due to him.

Referring to this meeting in his farewell address, Dr. Schwarz says: "This grand convention is now a matter of history; the sacrifices of time

and money which it imposed upon our members, are no longer remembered, but the benefits which it has brought to the St. Louis Medical Society are indeed great and enduring.

"The work of the year has brought our members into closer fellowship; the visit of the parent body has led to a general understanding of its wonderful organization and of its well-directed efforts to advance medical science, to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; more than ever before do our members realize that it is their duty to participate in this work and that state-wide improvement in medical education, and in the regulation of medical practice and in the material welfare of the medical practitioner can only be achieved through the united efforts of the organized medical profession."

He also has a word to say regarding the duties and responsibilities of a large medical society concerning the education of the public and the supervision of the medical schools, and the examining and registering of physicians as follows: "Our members begin to understand that it is their duty to enlighten public opinion regarding questions of public health; they begin to understand that it is a simple duty of every-day community and of every state to take proper care of its sick poor, and to provide proper pay for the medical men who are to do this work; they begin to understand that the state must not only supervise the medical schools and the examination and registration of physicians, but that the state must likewise provide adequate means for medical education; they begin to understand that to bring about these much needed improvements it is necessary for the organized profession of Missouri to educate the people of the state in these matters and to bring its united influence to bear on our legislators and force them to take the necessary action."

Dr. R. E. Schleuter makes the following commendable statement regarding the relation of the local society to the state organization: "Furthermore, it is essential that this society remain on the most friendly terms with the Missouri State Medical Association; this, however, without mixing their separate affairs. By this I do not mean that we should yield to the state association in all matters. But we should also assume no dictatorial attitude because we supply more than one quarter of its membership. In fact, for that very reason, we must shoulder a large share of the responsibility in the proper maintenance of medical ethics and dignity in the state. We should co-operate as much as possible with those from the rest of the state and only expect them to meet us half way. The men from the other cities in the state and from the rural districts may not feel as kindly towards us as we might desire. Our dealings with them in all things, therefore, should be conducted with the utmost generosity and liberality. For the city of St. Louis must rid itself of the provincial spirit and become a real metropolis. Its medical profession must assume such shape and proportions as will be commensurate with the size and influence of the city."

Regarding the duties of the members to their societies he makes the following statement: "Sooner or later our members will attend in larger

numbers the meetings of the state and national associations and take a greater part in their deliberations, both scientific and administrative. Those practitioners who know that it is more than a satisfaction to be connected with the advancement in medicine and surgery, will become more numerous among us, whether by home production or importation. And those who calculate merely the material value of this society and continue their membership just for the standing in the community which it gives them, will become fewer and fewer."

With such sentiments every reasonable practitioner must heartily agree, and we prophesy for this representative society of our near neighbor a continuation of the excellent work already begun. Certain individuals and a large organization in Illinois might read these expressions with profit.

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### SHOULD HEALTH CERTIFICATES BE REQUIRED TO SECURE THE MARRIAGE LICENSE?

Senator Beal of Alton has taken up this subject at the instance of the medical profession of Madison County, and introduced the bill which will be found in our legislative columns, and which demands the serious consideration of the members of the State Medical Society. In this connection the paper by Dr. Fiegenbaum, secretary of the Madison County Medical Society, will be read with interest.

This matter is also agitated by the law-makers of Oklahoma. Representative J. V. McClintic of Swanson County, recently introduced in the lower house of that legislature, a similar bill, and will bend his efforts to have it enacted into law prior to the close of the session.

"The measures provide that the examination shall include all classes and forms of illness and disease that would make a man or woman an unfit husband or wife, father or mother. Under the provision of the bill it will be necessary to have a certificate of health accompany every marriage license, by those who are authorized to reject applications unless accompanied by a clean bill of health."

Of course this matter must be thoroughly canvassed before such a bill is permitted to pass. The opportunities for graft are too patent to put the temptation before the average physician. For under the present bill no provision is made which will permit the appointment of one or more physicians in each county, as examiners, and as it now stands the certificate of one physician will be as good as that of another.

Agitation of this subject however, will do no harm, and it is possible that a bill satisfactory to all might be obtained.

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### THE GENERAL ASSEMBLY

As is well known to our readers the legislature of Illinois has been supposed to be in session during the month of January, and they are also probably aware that absolutely nothing has been done up to this time, except to introduce a few bills. A synopsis of the bills of interest



to the medical profession thus far introduced has been prepared by Dr. L. C. Taylor of Springfield, Chairman of the Legislative Committee, and will be found in our columns. From time to time during the session, information will be transmitted to every member of the State Medical Society, regarding legislative matters, and we invite the earnest consideration of every member to this important matter.

There is a rumor current that a great deal of politics will be played during the session, and it is reported that the speaker of the House is to be a candidate for Governor. In this event it can be presumed that the presiding officer will be very responsive to the wishes of a large and representative body, such as the Illinois State Medical Society.

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### THE AURORA MEETING

The next meeting of the Illinois State Medical Society will be held at Aurora, and as this is the first meeting ever held in that hustling little city, the members of the local profession are making every effort to score a success. Many elements will contribute to make this meeting very important, and we hope that a large number of the members will be present. This will involve a considerable sacrifice on the part of the members of the southern part of the state, but we believe that the meeting will be of such importance that none having the good of the medical profession at heart, can afford to remain away.

In our March, April and May issues further information regarding hotels and programmes will be given in the columns of the JOURNAL.

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### THE MAINE MEDICAL JOURNAL

Another state society has abandoned the old style of transactions and adopted the journal form of supplying its members with the proceedings of the state medical society and its component county societies. The remarkable change which has taken place in the past twelve years, since the Illinois State Medical Society took the leadership in this matter, is worthy of remark. The probability is that before many years every state medical organization will be represented by a journal, and we are furthermore gratified to see that the Maine society has also followed in the footsteps of Illinois and dubbed its journal the *Maine Medical Journal*, rather than the long and cumbersome title adopted by so many of the state society journals.

Our farthest east state is now the thirty-first of the states and territories of the Union to be represented in this manner. The Massachusetts and Louisiana State Societies are represented by old established journals. We congratulate the society and the editor, Dr. F. Y. Gilbert of Portland, on the good appearance and valuable contents of the first two numbers of the journal, the first appearing in December, 1910. The

*Journal* is supplied with a large corps, sixteen in number, of associate editors and a board of managers of eleven members. Of course one or two of these men will do the actual work and will be responsible to the society for the success of the *Journal*.

We congratulate the Maine association and prophesy great success for the new venture.

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#### DR. EGAN HAS PROBABLY FORGOTTEN WRITING THIS LETTER

Under date of Sept. 1, 1906, Dr. Egan wrote to the Editor of the *Journal of the American Medical Association*:

"As to the standing given by your tables to Illinois, on which the foregoing figures have considerable bearing, I desire to say a word.

"Illinois does not pretend to be a state in which exactions in medical examinations are unusually severe. The statute requires that the examination "shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner," and the State Board of Health endeavors to carry out the provisions of the law. If the candidate shows sufficient evidence of his ability as a practitioner, it becomes the duty of the board to grant him a certificate.

"The showing that Illinois rejects a smaller percentage of Illinois graduates than of those of other states is largely due to the fact that the board is called on to examine so large a percentage of graduates of Illinois colleges whose alumni receive uniformly high grades in all states and also to the fact that but 7 per cent. of the applicants appearing before the board and coming from outside the state represent those colleges showing less than 10 per cent. of failures.

"The Illinois State Board of Health acts as an examining board rather than as an examining and rejecting board."

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#### CONFERENCE ON MEDICAL EDUCATION AND MEDICAL LEGISLATION

The annual joint Conference on Medical Education and Medical Legislation, called by the Council on Medical Education and the Council on Health and Public Instruction of the American Medical Association will be held at the Congress Hotel, Congress Street and Michigan Avenue, on Wednesday, Thursday and Friday, March 1, 2 and 3, 1911. Following the plan adopted last year, the first day of the conference will be devoted to medical education, the last day to medical legislation, while the second day will be given to a discussion of state regulation of the practice of medicine. The first day's program will include several papers as follows: "Entrance Examinations," by Dr. Thomas S. Fiske, Secretary of the College Entrance Examination Board, New York City; "Subjects Included in the 'Two Years of College Work' Required for Admission to Medical Colleges," by Dr. Charles R. Bardeen, Dean of the School of

Medicine of the University of Wisconsin, Madison; "A Five-Year Medical Course," by Dr. J. George Adami, Professor of Pathology, McGill University, Montreal; "Laboratory Equipment and Instruction," by Dr. E. P. Lyon, Dean of the St. Louis University School of Medicine; "Equipment and Instruction of the Clinical Years," by Dr. George Blumer, Dean and Professor of Medicine, Yale Medical School, New Haven; "The Educational Function of Hospitals," by Dr. Frank Billings, Dean of Rush Medical College, Chicago; "Valuation of Credentials," by Dr. Frank B. Hiller, Secretary of the Missouri State Board of Health, Jefferson City; "The State License Examination," by Dr. Horace G. Norton, Secretary of the New Jersey State Board of Medical Examiners, Trenton, and "Interstate Reciprocity," by Dr. W. T. Gott, Secretary of the Indiana Board of Medical Registration and Examination, Indianapolis.

On Wednesday evening, March 1, a public meeting will be held in the Florentine Room on the second floor of the Congress Hotel. Addresses will be given by Professor George E. Vincent, President-elect of the University of Minnesota; Dr. Edmund J. James, President of the Illinois State University, and Dr. Wm. L. Bryan, President of the Indiana State University. The subject for the evening meeting will be "The Duty of the State in the Protection of Public Health."

The morning session, on Thursday, March 2, will comprise papers on "The Attitude of the Judiciary in the Enforcement of Medical Practice Acts," by Judge Jesse A. Baldwin of the Appellate Court, Chicago; "Considerations Which Should Influence Appointments on State Examining Boards," by Hon. A. O. Eberhart, Governor of Minnesota, and "What should be the Attitude of the State Toward the Practice of Medicine?" by Dr. M. L. Harris of Chicago.

The afternoon session will be opened by Professor C. R. Henderson of the University of Chicago, on "The Regulation of the Practice of Medicine for the Public Good," followed by a symposium on "The Administration of State Medical Practice Acts." This will include papers by Dr. A. B. Brown, Secretary of the Louisiana State Board of Medical Examiners, on "The Administrative Duties of the State Board of Medical Examiners"; by Mr. A. C. Umbreit of Milwaukee, Attorney for the Wisconsin State Board of Medical Examiners, on "Medical Prosecutions and Revocation of Licenses"; by Mr. Jas. N. Wilkerson, of Fort Worth, Tex., Attorney for the Texas State Board of Medical Examiners, on "The Defense of Medical Practice Acts in the Courts"; and by Dr. Herbert Harlan, President of the Maryland State Board of Medical Examiners, on "Financing State Board Work." The last paper on the afternoon program will be "Suggested Features of a Model Medical Practice Act as Shown by Supreme Court Decisions," by Dr. Frederick R. Green, Secretary Council on Health and Public Instruction, Chicago.

On the third day, the National Legislative Council of the American Medical Association will meet to consider medical legislation. The morning session will be devoted to routine business, reports of committees, roll call of states, reports of officers, etc. In the afternoon, new



business and reports of reference committees will be considered. Dr. Cressy L. Wilbur, Chief Statistician of the Bureau of the Census, will present a paper on "Progress in Vital Statistics Legislation," and Dr. H. M. Braeken, Secretary of the Minnesota State Board of Health, will present a paper on "Needs of Public Health Education in the United States." The presentation and adoption of the report of the committee on resolutions will close the program.

This conference will be attended by representatives of state medical societies, medical colleges and universities, delegates appointed by governors, representatives of state boards, members of the National Legislative Council and members of the Councils on Medical Education and Health and Public Instruction. It is anticipated that the attendance last year of over 200 will be exceeded this year. A cordial invitation is extended to all physicians of Chicago and Illinois to attend this conference and to take part in the discussions.

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## Correspondence

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### SCARLET FEVER GERMS AND THE STATE BOARD OF HEALTH

EVANSTON, ILLINOIS, Jan. 16, 1911.

*To the Editor:*—The January number of the JOURNAL contains two items of more than local interest. The article of Dr. Stubbs contains on page 56 some reference to the scarlet fever epidemic of 1907. The author seeks, by assertion only, to dispute the evidence that the disease was spread by milk. I think that if he will carefully read my article, published in the *Journal of the American Medical Association* for April 5, 1908, he will find the proof as complete as it is possible to make it with our present state of knowledge. He seeks to discredit such evidence by the statement that no germs were found. Can he describe the specific germ of scarlet fever? If he can, he owes it to the profession, which has so long sought such information, that he lose no time in giving such evidence. Has any one found the specific germ of yellow fever? Yet does Dr. Stubbs dare to say that the *Stegomyia calopus* mosquito does not spread the disease? He quotes an article by Dr. Doty of New York, written in 1893, to uphold his theory of the spread of diseases, but he forgets that we have learned much of typhus fever since that time. Unfortunately, either Dr. Stubbs has not kept in touch with the investigations relative to tuberculosis, or he does not read with an open mind, or he would not to-day question the possibility of the conveyance of that disease by the drinking of milk. His tirade against pasteurization of milk ignores the mass of evidence on that subject, and ends with an assertion, unsupported by a particle of evidence.

On page 82 are to be found the resolutions passed at a meeting of the Chicago Medical Society. The fourth paragraph contains the statement

that the charges and criticisms against the State Board of Health have thus far been unsupported by competent evidence. This is not true. Legal evidence has been filed, but as yet those charges have not had an investigation by the "legal authorities." In that connection, as well as with reference to the article by Dr. Stubbs, permit me to again call attention to my article on scarlet fever, and the reply of the secretary of the State Board of Health in the same number of the *Journal of the American Medical Association*. If, as stated by the secretary, they could find no evidence that the scarlet fever was the result of infected milk, why did the representatives of the Board take a part in the closing of the bottling plant? In my article I give the name of a farmer living at Y, in whose family there were several cases of scarlet fever while he was daily shipping milk through the bottling plant at X. The milk cans from Y were put on a car to be taken to the bottling plant at X, where the milk was bottled. In Dr. Egan's reply he denied the possibility of X milk being infected, but admitted that they had found scarlet fever at Y, and added that evidently we had not discovered the disease at Y. This was disproved by my article, because I named families there infected.

Because we were after the scientific facts, and did not wish to injure unnecessarily the milk company, the name of the milk company, as well as the name of the bottling plant, and the neighboring station which we called Y, were not given. This is only one item of the evidence submitted that the present administration is at least incompetent.

HENRY B. HEMENWAY.

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## WHEN DOCTORS DISAGREE WHO IS TO DECIDE?

CHICAGO, January, 1911.

*To the Editor:*—Again it is the "Rump House of Delegates"—my third revised edition of that controversy of the doings of the House of Delegates at Danville.

In reading the communication of Dr. Collins in the November ILLINOIS MEDICAL JOURNAL giving his version of the affairs that happened at the State Medical Society at Danville I am surprised at the position he assumes. But I suppose when a man takes a Rip Van Winkle pose for six months we ought not to be astonished at any attitude he might take. I have wondered why Dr. Collins did not make his understanding of the *res veritas* public earlier and not wait until memory had been befogged so that it had to be coached by a biased prompter. As the secretary of the Illinois State Medical Society will not give a copy of the minutes of the proceedings on that memorable never-to-be-forgotten occasion, let me give a very brief synopsis of the doings. After Dr. Lydston presented his resolutions the following took place:

1. A motion was made to table the resolutions.
2. Said motion was lost.
3. A roll-call was demanded and granted.
4. Result, motion was lost.
5. Dr. Lydston moved the adoption of the resolutions.

6. Somebody's machine feet became chilled (it was a hot day) so he made a motion to adjourn and it was seconded.

7. Chairman put motion and it lost.

8. At this point the chairman became nervous, conscience stricken, hesitated, then in a feeble voice said the "ayes have it."

9. There was an immediate demand for a roll-call, which was a correct procedure, according to the rules of debate. See Roberts' Rules of Order.

10. Then came the climax. The chairman declined to grant the demand made by a score of delegates for the roll-call and then vacated the chair.

11. At the call of delegates the second vice-president immediately took the chair vacated by the first vice-president. The house was polled and nineteen according to the secretary, not counting himself which made twenty, and one in the chair, making twenty-one; and during the talkfest another delegate came in making twenty-two.

12. A request was made for the reading of the stenographer's minutes.

13. These minutes showed that Dr. Lydston offered his resolutions; that a motion to adjourn was made; that this motion was put; that the chairman declared the ayes have it; that a demand was made for a roll-call, and while the demands were being made the chairman vacated his official chair and joined the stampede for the door.

14. Please note that *after* the motion to lay said resolutions on the table (which motion the chairman admitted was lost) Dr. Lydston moved the adoption of his resolutions which was followed by a breezy time.

Why does Dr. Collins omit to mention this fact? Was he asleep; not onto his job; or so badly mixed that he failed to note Dr. Lydston's motion? Surely five months' thinking and a reasonable amount of coaching ought to have put him in remembrance of this important point.

Dr. Collins wishes to make a correction as to my statement as to the quantity—not quality—that left the hall. He desires to make change read: "A large *majority* of the delegates left the hall and the chairman refused a roll-call." I do not see that that helps the dilemma, as long as we contend that a quorum remained which gave the right to carry on a legal session. Now as to facts. I believe, and am justified in that belief (by the testimony of over twenty delegates) that not a single delegate left the hall until the vote to adjourn was counted, and when the chairman said the ayes have it; and before the announcement was officially, legally made, the stampede began.

But before the declaration was made by the chairman the demand for a roll-call was made by a score or more of delegates.

The only thing I noticed the chairman do, was, instead of striking the table he "struck out, literally, for tall timber."

Now as to the number of delegates remaining in the assembly room after the chairman had "struck out"; Dr. Collins says that Dr. Weis counted nineteen on the floor: all right, where was the one in the official chair, and where was the secretary, and where was the President? (I have been informed that he was in the back part of the hall out of sight.)



Nineteen on the floor plus one in the chair makes twenty and the secretary makes twenty-one. Twenty is a quorum and I counted twenty-three.

Did our noble, courageous, valiant secretary flee with the weak-backed and cold footed? No. He remained and faced the issue. His presence was noted until the legal, final adjournment was made. He with his official stenographer tarried, thereby tacitly acknowledging the legality; helped to make it legal. Oh no, it will not do to go forward like a crab at this stage of the play. Dr. Weis even went so far as to have the stenographer read some of the minutes and took active part in the meeting and talkfest.

The secretary does not seem to comprehend his position in the case. He is a stand-patter and a stand-patter is a moss-back, and a moss-back is a rut trotter, and the rut is so deep he cannot see out so is forever doomed to be in the dark. *Vincit omnia veritas*. Again as to the last sentence in Dr. Collins' communication. He says "it would have been manifestly unjust to have ordered a roll-call when fully three-fourths of the delegates had left the hall, and the chairman refused to do it." I would like to ask as to how it would have been unjust or unfair? If three-fourths of the delegates wish to avoid the issue of a question and desert and leave one-fourth of the members to do the business, they have no one to blame but their own cowardice. That one-fourth left constituted a quorum and their demands for a roll-call should not have been ignored. Allow me to quote from the editor of the ILLINOIS MEDICAL JOURNAL: "The best legal authority has given an opinion that when Dr. Collins announced that the vote to adjourn was in the affirmative it was absolutely unnecessary for him to make any announcement or declaration whatsoever."

That is a square admission that the chairman (Dr. Collins) did not make the alleged announcement or declaration, "we are adjourned, or the House stands adjourned."

For authority for my position see Chap. xl, Sec. 3, then consult Roberts' Rules of Order on Motions, Page 63.

*Ultima Unle,*

Yours very truly,

JAMES E. STUBBS, M.D.

## Special Article

### THE MEDICAL PROFESSION MUST CHANGE ITS TACTICS

WILLIAM J. ROBINSON, M.D.

President of the American Society of Medical Sociology.

NEW YORK CITY

He who is not a frequent visitor to radical clubs, does not come in contact with newspaper men, with New Thinkers, and does not read regularly the numerous naturopathic, health culture and physical culture journals, and other allegedly advanced publications, can have no idea how the medical profession is ridiculed, how it is maligned, how it is lied about, how it is misrepresented, how it is "knocked" on every possible occasion.

We are pictured as ignoramuses, grafters, butchers, anxious to operate whether there is a necessity or not, drug dopers, etc., etc. We are denounced as a trust, monopoly and any attempt of ours to organize, to pass laws protecting the public health, is characterized as an attempt at class legislation, a desire for special privileges, inspired by our fear of the competition, by our fear of the superior skill of our irregular rivals.

And the average physician who has not given the matter any thought, has no idea what effect these unceasing slanders and persistent lies have on the public mind, how suspiciously a large part of the public is beginning to look at the medical profession, how we are losing the confidence of the people, how the ground is slipping from under our feet.

As an illustration we need only mention the reception that has been accorded to the suggestion of a Federal Department of Health. The motives that actuate us and the objects of such a department were at once misrepresented, the people were made to believe that their freedom to choose a medical adviser was threatened, the forces of reaction and obscurantism, masquerading in some instances under the guise of liberalism, were quickly marshalled and in a short time a society was organized, which now claims a membership of one hundred and fifty thousand.

We physicians are ourselves to blame. When the irregular, fantastic and pernicious cults began to make their appearance, we paid no attention to them. We thought they amounted to nothing, and would soon dry up and shrivel away of themselves. When the malicious attacks began to appear in the various quack publications, we remained silent. We considered it *infra dignitatem* to pay attention to them, and we thought that the public would have no difficulty in seeing through their falsity and meretriciousness.

Our long and patient inactivity has been due to the false idea that the truth will always triumph and error is bound to die. Yes, eventually; but if error is allowed to grow and spread unhampered, while those who see the truth will not take the trouble to proclaim it and expose the error, then it can take centuries before the correctness of the truth and the falsity of the error will be perceived.

In this as in every other line of human activity prevention is immeasurably superior to cure, and the right way to fight error is not to permit it to get a firm foothold. Error and superstition are hard things to uproot after they have attained the dignity of a universal belief.

It is time that the medical profession change its tactics and assume a wideawake, militant attitude. It is time that we actively attack error wherever it shows its head. By reading papers before lay audiences, by participating in discussions, by writing to the newspapers, by refuting the false arguments of false prophets wherever they appear, we can do much toward destroying the influence of the quacks and the irregular cults. In short, we must throw off our exclusiveness, we must go out to the public and take it into our confidence.

The truth is with us—that we know; only we must not hide it under a bushel and expect that its light will, without any effort on our part, penetrate into the darkest recesses of ignorance and quackery.

## COUNTY AND DISTRICT SOCIETIES.

### CHRISTIAN COUNTY

The Christian County Medical Society held its meeting at the Court House in Taylorville, January 19, 1911. The following officers were elected for the ensuing year: President, Dr. J. H. Miller, Pana; vice-president, Dr. T. A. Lawler, Taylorville; secretary-treasurer, Dr. H. M. Wolfe, Taylorville; delegate, Dr. A. F. Turner. Censors: Drs. Armstrong, Nelms and Carroll of Taylorville. Dr. John N. Nelms, was made a member of the legal committee; Dr. Jesse P. Simpson of Palmer, of the public health committee; Drs. D. D. Barr, C. L. Carroll, G. L. Armstrong, Wm. H. Frazer, and Thos. A. Lawler of Taylorville of the resolutions committee.

### COLES COUNTY.

Coles County Medical Society met at the Charleston Hotel, Tuesday, January 3, 1911, at 7 p. m., with president Voight in the chair. Twenty-five members were present. The application of Dr. P. E. Kimmery of Lena was unanimously accepted by the society for membership. The applications of Dr. C. H. Harwood of Janesville and Dr. R. C. Cook of Trilla were read before the society and referred to the censors to report on at the next meeting. The society gave a banquet at the Charleston Hotel attended by 25 members, after which Dr. A. C. Cotton of Chicago gave an hour's talk on "Infantile Paralysis," which was greatly appreciated by the members.

The Coles County Medical Society never was in better condition than now; with great interest taken at each meeting; with good papers and good discussions and good attendance. The following officers were elected: President, Dr. O. W. Ferguson; vice-president, Dr. G. B. Dudley; secretary and treasurer Dr. R. H. Craig; censor, Dr. J. T. McDonald; delegate to the state meeting, Dr. R. J. Coultas; alternate, Dr. T. O. Foreman.

### COOK COUNTY

#### CHICAGO MEDICAL SOCIETY

*Regular Meeting, Nov. 16, 1910*

#### DISCUSSION ON THE PAPER OF DR. THAYER

DR. FRANK BILLINGS: The main thing I desire to say is that I have heard Dr. Thayer read many papers and as usual he so fully covers the subject that there is nothing left for anyone else to say. I think any practitioner of moderately wide experience has seen many cases of hemolytic jaundice, what Dr. Thayer calls the secondary type. This is due to some of the infections, namely, streptococcus and pneumococcus infections. Some of the patients suffering from pernicious anemia, also exhibit a type of hemolytic jaundice which Dr. Thayer has covered fully. Again, I have never seen a case which I could say belonged to the type of primary hemolytic jaundice. Possibly I have seen one of the acquired types. That was a student at the Northwestern University 23 years ago. I remember it so distinctly because he came to me several times after he entered school to be examined for jaundice, giving the history of having had it as long as he could remember, and that it never caused any disturbance of his general health. The physical examination showed a distinct jaundice, but no biliverdin in his urine, and no temperature. In the examination one could not detect enlargement of the liver or any tenderness in any part of the bile apparatus. He had



no bradycardia. He carried out his work for three years, graduated, and went out in practice. I thought at first that he suffered from an ordinary obstructive, catarrhal jaundice, but the absence of the biliverdin soon discredited that diagnosis, and the long jaundice also discredited it. I have seen him twice since then, and he still had the jaundice. Five years ago I met a cousin of the man and he says that he still has the jaundice. After hearing Dr. Thayer's paper I have decided to send for him and look into the character of his blood. Like the rest of you, I feel that we should thank Dr. Thayer for the complete discussion he has presented of an important subject.

DR. K. KOESSLER: I had occasion to see several cases of hemolytic jaundice under Chauffard and Vidal in Paris, among them some of the cases referred to by Dr. Thayer. Later I had the opportunity of observing a case here in Chicago, which was related to this symptom complex.

As far as acquired hemolytic jaundice is concerned, it may be divided into primary and secondary. In the secondary form there exists a definite etiology, carcinoma, rectal abscess, diphtheria, malaria, etc. Here belongs a case reported by Landouzy a few weeks ago, in which the characteristic symptoms of hemolytic jaundice were associated with pulmonary tuberculosis. There is some relation between certain cases of hemoglobinemia and hemoglobinuria and hemolytic jaundice. Sydney Ringer mentions the case of a boy aged 17 years who developed jaundice if he stayed in a cold room and in the winter, whereas the icterus disappeared in a warm room and during the summer.

I observed a case of hemoglobinuria with slight jaundice, in which the resistance of the erythrocytes, tested with hypotonic salt solutions and normal serum, was considerably lowered. Donath-Landsteiner's test was negative. These findings differ from those of Dr. Thayer, but are in accord with those of Meyer and Emmerich, who too, found the resistance lowered in some cases of paroxysmal hemoglobinuria. By no means do I wish to be understood as considering these two conditions identical, but there does exist a certain similarity in some of the symptoms, such as the increased fragility of the red blood corpuscles.

As far as the primary form of hemolytic jaundice is concerned, I prefer the term chosen by Dr. Thayer, cryptogenetic, which accords better with the present insufficiency of our knowledge. A few words concerning the differential diagnosis. Pernicious anemia especially very much resembles the symptom complex of hemolytic jaundice. The test of autoagglutination, referred to by Dr. Thayer, was absent in v. Steyskal's cases and in my own. How shall we, then, differentiate these two diseases? First, by the leukocytosis, characteristic for hemolytic jaundice. Every clinician who has had occasion to follow the course of pernicious anemia by weekly exact blood examinations, will have observed that periods of improvement occur during which not only the red blood corpuscles may reach almost a normal figure, but the leukocytes may be normal or even slightly increased in number. These periods of improvement were called blood crises by von Noorden, and at such a time, the blood picture of pernicious anemia and hemolytic jaundice may be indeed very similar. A close observation, however, of the course of the two diseases will soon correct this view. Pernicious anemia during the blood crisis shows leukocytosis together with the highest red count and the subjective condition of the patient is at its best. In hemolytic jaundice, on the other hand, the highest leukocyte count will be found when the patient's erythrocytes are at the lowest mark, and the condition of the patient is the worst.

Dr. Thayer, further, mentioned Banti's disease; Banti recently published a review of eleven cases of his disease. In not one case was the resistance of the blood corpuscles diminished.

The differentiation of pernicious anemia and hemolytic jaundice is certainly of greatest importance as regards the prognosis. One of Vidal's patients with hemolytic jaundice, showing the primary type of the disease, has been in good health for eight years. The diagnosis "pernicious anemia" in the epitheton contains the fatal judgment for the near future.

As far as the treatment of hemolytic jaundice is concerned, there is the question: Have we any drug to increase the lowered fragility of the blood corpuscle? The only sure means known as yet to do this is the intravenous, or preferably, the intragluteal injection of normal defibrinated blood. It is, however, a *conditio sine qua non* that before the autotransfusion the patient's blood is examined for isoagglutinins and isolsyins.

Dr. Joseph M. Patton:—I wish to express my appreciation of Dr. Thayer's very interesting delineation of certain blood findings which promise something toward relieving the general practitioner from the mass of doubt which entangled him at every step in dealing with cases of jaundice which are not clearly obstructive. The literature of the last ten years on this subject is rather mixed. The more we read of it the less we know of the subject. There are those who have tried to prove that there was no such thing as hemolytic jaundice; that because bilirubin was formed from the coloring matter of the blood the liver was a necessary agent in the production of an excess of bile pigment in the system; we therefore had no right to assume that there could be such a thing as hemolytic jaundice. The argument of polycholia and the varying conditions of pressure under which the production and absorption of bile takes place do not explain why jaundice occurs in cases where these conditions could not be demonstrated. Even the cases of apparently infectious origin, and the cases of so-called nervous jaundice are explained by those who adopt these theories as due to variation in pressure owing to splanchnic effects, spasticity of the ducts and other like causes, to prove that these effects are dynamic in connection with the circulation of the bile ducts and organs of the liver. The ordinary man had gotten into the position where he did not have enough nerve to make a diagnosis of hemolytic jaundice in contradistinction to obstructive jaundice. Now we come to a period of observations as delineated by Dr. Thayer, which promise some way of making a diagnosis, and leading us out of this wilderness. My own personal experience in the matter of the blood findings amounts to nothing. I deal with these cases clinically and not in the laboratory, and therefore I know nothing about the blood findings any more than the ordinary observations we make in these cases. I have noticed in cases of supposedly infected jaundice, and in one or two cases of so-called nervous jaundice recurring after marked psychic impressions, that the blood-count was much lower, and that there usually was neither biliuria or hemoglobinuria. The blood findings to-night appear to be of great value, and I think that the future holds out a promise toward the differential diagnosis of these conditions and the recognition of an essential hemolytic jaundice.

Dr. John A. Robison:—I wish to express my thanks to Dr. Thayer for the very extraordinary paper. It is certainly replete with suggestions to the general practitioner. I have profited very much by listening to the paper. In the first place, I gather that the cause of the disease is not known. In the second place, I gather that it has an entity, and can be differentiated from various other forms of jaundice. That is the point that is of greatest importance to practitioners who are not laboratory workers. The most important point is that we who are not expert hematologists, when we find clinical signs which seem to point to hemolytic cases, should at once refer such cases to the expert hematologist.

Dr. A. C. Croftan:—I understood Dr. Thayer to say that bile acids were never found in the blood of any of these cases. In view of the fact that bile acids, in small quantities, it is true, are a normal constituent of the blood, this is an astonishing and interesting statement. For it signifies one of two things, viz., either that the chemistry of the blood was not so carefully studied as its morphology, and that hence the presence of bile acids escaped detection, or that they were actually looked for (as one would infer from the express statement that they were *not found*) and discovered absent; hence that one would be dealing in these cases with an interesting anomaly in this direction.

The presence or absence of bile acids is important, because the interpretation of the icterus as hepatogenous or hematogenous or h-hep may be said to depend

on this point; the bile acid being formed according to the commonly accepted view (that is, however, by no means definitely established) in the liver alone. Complete absence of bile acids from the blood in an icterus case would therefore by all means characterize that icterus as hematogenous. I believe this point should be more carefully studied with considerable quantities of blood. It has more than an academic interest. For one must remember that the bile acids are in themselves decidedly hemolytic and, unless their presence can be definitely excluded, one cannot deny the possibility that they possibly constitute the toxic element of unknown character and origin that aids in the hemolysis described, and that in its turn is claimed to produce the formation and circulation of bile pigments liberated from abnormally liberated blood pigments.

In closing the discussion Dr. Thayer said:

I was very much interested to hear Dr. Koessler state that the resistance of the corpuscles in paroxysmal hemoglobinuria has been found to be reduced. In several cases observed by my friend, Dr. Moss, this has not been the case. With regard to the question of viscosity, I can only say that it was not tested. The two cases which I have observed myself were of the congenital class. In each instance bilirubin was found in the serum and urobilin in the urine. There was no bile pigment in the urine. In each case there was marked diminution in the resistance of the red corpuscles. One word with regard to the question of a drug which will increase the resistance of the corpuscles. Some work done in the laboratory of Dr. Roger S. Morris, several years ago, appeared to show a slight increase in the resistance of the red corpuscles after the long administration of iron.

With regard to the statement that bile acids were not to be found, I take it that observations were made in the ordinary way. The statement is made by very good men simply that bile acids were not to be found.

#### DISCUSSION ON THE PAPER OF DR. ROBERTS

Dr. W. L. Ballenger:—I was very much interested in the opening remarks of Dr. Roberts, and was very much impressed with the practical turn his mind has taken in reference to plastic surgery, and one particular portion of it, namely, that it is often necessary for one to be free with the knife, chisel or gouge, so as to liberate the parts that they may be moved into position to correct the deformity. That, according to my experience, is one of the essentials in correcting deformities of the face. I cannot enter into a discussion of all the phases of the subject, even had I the time, but I will limit my remarks to two or three conditions. In one case with a very long pendulous nose, I obtained a very interesting and satisfactory result in its correction. The patient came to me to have the pendulous tip obviated. I resorted to the expediency of removing a V-shaped portion from the septum, and then bringing the freshened edges together and strapping the nose with adhesive plaster. Instead of the nose being pendulous he now has a nose that stands straight out from the lip, or nearly so, and is a normal appearing nose.

The second case is one I have called the "cyclone nose" because the injury occurred in a cyclone. The man was lying in bed, with two babies in his arms, and was carried some 200 feet, both babies being killed. When he came to me he had a very long nose. The lower part of his nose and lip were dislocated downward, so that the nostrils rested on the gums of the upper jaw. It had become adherent in this position, without the knowledge of the attending surgeons who waited on him at the time of the accident. The right nasal bone was entirely gone. The central portion of his nose was scar tissue and much sunken. I made a triangular incision around the scar tissue and removed it, and then dissecting the skin over the naso-frontal process, I chipped off a portion of it, leaving it attached to the periosteum and filled in the defect made by the loss of the nasal bone. At the same time I dissected the lip loose from the superior maxilla up almost to the orbits. The end of his nose and cheek and lip were thus entirely



freed. I then introduced sutures from either lower angle of the triangular incision, tied them and thus drew the nose and lip upward. I introduced large tubing into the nostrils to prevent adhesions and maintain the nose and lip in their elevated position. At the end of two weeks he had a good breathing apparatus and a much improved face.

The third case I wish to call attention to is one of large ears, which in the newspaper cartoons are often called "yellow kids." An elliptical piece of skin over the mastoid back of the auricle was removed, and then a portion of the auricular cartilage was removed to reduce the size of the auricle. The cartilage of the auricle was then sutured into position and the skin border sutured, thus greatly reducing the size of the ears. Whereas before the operation the auricle stood 23 mm. from the head, after operation they were 8 mm. from the head.

In several such cases I have obtained similar happy results.

DR. D. A. K. STEELE:—It is now about twenty-eight years since I took my first lessons in plastic surgery under Dr. Roberts of Philadelphia. His method was one of the first I followed. I am glad to see that Dr. Roberts has limited his technic to the fixed and permanent methods of modern surgery, that is, repair from the patient's own tissues, or autoplasty, where in some cases it may be necessary to use bone chips, and that he does not mention heteroplasty, which is the method so commonly in use by beauty doctors, whereby the injections of paraffine temporarily restore the conformation of the deformed part, but will in a little while exert an exceedingly deleterious effect on the soft tissues. They have resulted in the development of malignant disease; nor does he mention the mechanical means in heteroplasty that are used by surgeons, the introduction of wire frame work left in temporarily, and in some cases permanently, or the method of introducing bones of birds or animals. I have used sometimes osseous tissue or structure, in one case a sparrow's thigh bone being used to form a bridge for the nose. It answered very well. I have used, as many surgeons have, small gold plates, but the method Dr. Roberts recommends, of limiting ourselves to the material from the patient's own body gives the best results. We have learned from Dr. Roberts, and also the lamented Senn, and our President, the necessity of a free incision.

I was particularly interested in the method Dr. Roberts described for the formation of a new ear. In former times we had to employ artificial material very much in the same manner, perhaps, that was used in one of the side shows at the World's Fair, the Horned Man he was called, with a very fierce face and kinky long hair. He had a pair of horns that resembled small prongs of deer's horns, and careful inspection did not reveal the origin of the horns, and it was not until some years ago that I found out it was a case of real heteroplasty. That fellow had been hired to have an operation done. An incision was made over the vertex from one ear to the other, and a silver plate was introduced under the scalp about five inches long, in which there was a female screw, and then in the deer's horn the male screw was inserted. When it was entirely healed a minute puncture was made for the projecting male screw, and no one could discover that the horns had not actually grown in that place. Some such method I thought might be used in the case of the ear. (Laughter.)

DR. TRUMAN W. BROPHY: I have long been familiar with the excellent work done by Dr. Roberts, and it is certainly very gratifying to feel that he is further developing it.

You may search the works of surgery the last twenty-five years and you will find no marked improvement in the operations under discussion over the methods employed fifty years ago. We find to-day men who are improving old methods and devising new means of accomplishing work far better than in the past.

I was very much interested in the paper presented by Dr. Roberts and his explanation of his methods. He has shown some very interesting, and I may say, remarkable cases. The case which he presented of hare-lip in the median line, is unusual. Only one such case has come into my own practice, and one I have

observed in the practice of Dr. Gilmer of this city. The literature, I believe, shows three cases of the kind.

The plan of lifting up the tissues, as shown in the illustration, and producing a lip, I regard as something new, and an improvement over the old plan.

Just recently I had occasion to operate on a patient for whom the surgeon had removed the pre-maxillary bones that extended out beyond the nose. The surgeon also removed the central part of the lip. Adhesion of the drawn-in lip to the cut-off end of the vomer followed, and it resulted in drawing the upper lip in to a very remarkable degree.

To correct the deformity, I divided the central part of the upper lip, removed a "V" shaped piece from the lower lip, and transplanted it into the upper lip. This restored a very presentable appearance.

I have noticed in the photographs Dr. Roberts has passed around, a device for the purpose of bringing together a divided palate, and I might state that about twelve or fourteen years ago I made use of a similar plan, but I finally abandoned it though I think it will work very well in some older cases where it is inexpedient to bring together the separated bones by immediate union.

To show what may be done by intra-oral surgery, I brought with me a photograph of a boy who had leontiasis. This boy was greatly deformed. He came to me five years ago, and these photographs were made only last week, showing that there has been no recurrence of the growth. I might state that this operation was made within the mouth, and I do believe that modern surgery must depart from the old methods of making so many incisions externally for the purpose of operating within the mouth. With suitable instruments the surgeon may do a great many of these operations by removing sections of the bone and taking out diseased tissues without making scar tissue, which is a deformity.

I am especially gratified that Dr. Roberts has come to Chicago and I hope he will come frequently.

DR. JOHN P. LORD, Omaha: I thank you for calling upon me, but I do not know that I can make any contribution to the discussion. Perhaps I could not do better than heartily endorse what Dr. Roberts has said in regard to the value of the step method in these procedures. I also wish to emphasize, because it has been in the line of my experience, the great value of extensive incisions with a certain boldness of execution and thus avoid the scant thin flaps and the sparse results that are so common in this form of surgery, especially the upper lip.

Those who have discussed the papers have recited cases. I want to call attention to a very special case which I had last winter, in which an Indian put a shotgun under his chin, and discharged it with suicidal intent. It carried off his lower jaw, left two molar teeth on one side, three on the other, three on one upper jaw and four on the other, two of which, however, had to be removed. The nose was entirely carried away, and yet there was not so much tissue lost by this extensive gun-shot wound as one would suppose would be the case. The appearance of the man as he walked in, with his tongue on his neck, the loose tissues hanging downward, was very grotesque. I was nonplussed for the time. I did try to cleanse the parts, and within a few days I began very extensive repairing of the parts. The mouth was more difficult than anything else. It became necessary to furnish a frame-work to support the prominence of the cheek, and the nose as well. Following the recommendation which I first saw presented by Dr. Allen of Indianapolis of making a silver frame-work for the nose, it was constructed with a longer flange on either side to rest on the prominence of the malar bones. The superior maxillary bones were mostly absent so that the lateral flanges of the metal framework had to be very long in order to fasten them in the neighborhood of the malar bones on either side. This was introduced, and is being worn to-day. It was somewhat disappointing on account of a disposition to fall down on one side. It held fairly well above because the tissues were loosened along the forehead, and the plate ran up onto the forehead, and small screws were introduced to hold this in place. After repeated procedures we had

a fairly good breathing apparatus. To hold up the lips we had constructed bridge-work to fasten onto the molars so as to give him the semblance of a normal mouth. Only the upper ones were successful. The Indian promised to come back for the completion of this work, but as yet he has not appeared. I hope to present him to the surgical world some day if he gives me an opportunity.

Dr. L. Schooler, Des Moines:—I listened with pleasure to the paper. I think some of the unsightly burns that occur on the face, and look as if they were almost irreparable, can be remedied. I have had considerable experience in operations of that kind. I have had good results by being guided by the parent whom the child most resembles. The results seem to be better when the child attains adult age. Of course, it is necessary to determine that the blood and nervous supply is sufficient for the nutrition of the tissue. One must be careful about asepsis to get good results.

Dr. CHARLES M. ROBERTSON: There is one form of nasal deformity which is prevalent, and which no one has touched upon. It is the case in which the septum of the nose has disappeared, and the facial bones have collapsed. It gives us a dish-shaped nose, with an opening in the presenting surface. In order to close the opening it is necessary not only to close up the nose, but to form a mucous membrane in the nostril. This is done by taking flaps from the side in this manner, and turning the skin surface in. If the side bones are not too much destroyed by the ulcerative process we can chip off a piece of the superior maxilla, bring it into the center, wiring it to make a new bridge. Then we slide up soft tissue until we get a pretty fair profile, and sew up the skin on the outside with fine silk sutures. I have had three or four cases of this kind, and have succeeded in getting a nose that looks very decent.

There is another kind of nose that Dr. Ballenger spoke of, in which the patient must have his nose built up, and at the same time have his nostrils opened by plastic operation, viz., in cases where the septum of the nose has been fractured, stuffing up the nose by what we call a wrinkling of the septum. In these cases the nose is cut on the dorsum, and the skin dissected for a considerable distance. Then the tissue under the skin is separated from the bony part of the nose, and the septum is exposed outside and above the mucous membrane. The next step is to separate the mucous membrane from the septum deep down into the nostril avoiding entering the nasal chambers proper. Then the false articulation is severed by shears under the mucous membrane. After that is cut we have our quadrangular cartilage separated from the bony plate of the septum outside of the mucous membrane. Then we go deep into the nose with a wire suture, through the quadrangular cartilage by wire stitch and carrying it out to the spinal process of the frontal bone, where it is anchored through the plates. This tissue is then elevated into place. After this is done the tissue is slid in from the side to fill up the contour and the external wound sewed up with a fine silk suture.

A "V" can easily be taken out of the nose to raise the tip, but the thing to be done is to keep the sutures external to the mucous membrane, so that the sutures do not get infected from the inner surface of the nose. In doing this we have the sutures in the septum buried.

Dr. E. F. Snyderacker:—There was one thing Dr. Roberts just touched on, and that was the difficulty of supplying large defects where we need large quantities of skin. I devised an operation several years ago which has rendered me good service. Instead of doing the old Italian operation I cut a skin flap from the neck, beginning below the angle of the jaw, following the course largely of the sterno-cleido-mastoid muscle. I cut it so that I will have plenty of skin. If I wish to repair both eye-lids I split my flap. I then turn the flap up, being careful not to put any tension on the pedicle. I sew the flap in place, and leave it in say for a week or ten days. Then if I have taken a great deal of skin I replace the skin in the neck and suture it back in the neck. In this way I have



employed skin to supply all defects. The skin is much more plastic. The heavy skin of the face is not adapted to eye-lids, and I have all the skin I want. We can cut these flaps as large as we wish. This is only for severe injuries, where we have large defects, where scars are adherent to the bone, and we cannot use other skin.

DR. ROBERTS (in closing the discussion) said: I am very much obliged for these suggestions. It seems to me it is pretty late and I would better go home. I am very much obliged to Dr. Brophy for the good things he has said, for I know whatever he says carries great weight. We need to get the dentists to tell the oral surgeons what to do.

*Regular Meeting Nov. 23, 1910*

A regular meeting of the Chicago Medical Society was held Nov. 23, 1910. The president of the society, Dr. Alex. H. Ferguson, occupied the chair. Dr. Jacob Frank read a paper on "Liver Incision: A New Method (Illustrated)." Dr. Alex. C. Wiener read a paper on "Non-Malignant Tumors of the Colon."

*Regular Meeting, Nov. 30, 1910*

A regular meeting of the Chicago Medical Society was held Nov. 30, 1910. Dr. Alex. H. Ferguson, president of the society, occupied the chair. Dr. Paul Gronnerud read a paper on "Appendicitis Pictures." Dr. A. Zimmerman read a paper on "Cases of Intestinal Obstruction and the Lessons Derived Therefrom." Dr. Aime Paul Heineck read a paper on "The Modern Operative Treatment of Varicocele of the Spermatic Cord."

DISCUSSION ON THE PAPER OF DR. ZIMMERMAN

Dr. Emil Ries;—I will take up the pertinent points as they occurred to me in the report. First of all: Mark how little clearness there was about the pathologic condition. In the first case there was a mass of intestinal coils all adherent; it was not clear to what extent; it was not clear where it was. The doctor made a colostomy below and that seemed to give relief, although the obstruction was above.

In another case there was an obstruction of the bowel; not known why. There was an adhesion; not definitely known where. In the third case there was a ring of unknown nature under which coils of the intestines had slipped and become incarcerated. Where that was and what caused the ring was not known.

Understand me: I do not say this in the spirit of carping criticism, but to emphasize to you that the doctor showed his experience and his wisdom in not investigating thoroughly just to perfect his anatomic diagnosis. A man who spends half an hour examining just what anatomic region was involved, just what caused the ring and why would have had a fine specimen—at post mortem. The doctor showed his knowledge of these conditions when he did not waste time in unprofitable exploration. He did the first thing he could do, and he did it quickly and got out of the abdomen.

That is one of the greatest lessons to be learned. It does not do to work around half an hour or an hour in an abdomen just to have a perfect diagnosis. Do what must be done quickly and get out again. That has been urged for the first days of intestinal obstruction, but it is even more important and more applicable in the late stages.

The doctor spoke about the anesthetic. For some time we have heard that one does not need a general anesthetic, that a little local anesthetic just for cutting through the abdominal wall is all that is necessary, that the bowel does not feel anything, that you can handle it, feel it, stitch it and pull it without pain to the patient. No such thing! A man with an obstruction, such as the doctor has mentioned, is not in a comfortable condition, and he is not going to be patient. You work with a local anesthetic, where he knows everything that is being done, and you are going to have trouble. When you lift up the abdominal wall it will

be decidedly painful. When you begin to work on the intestines and have to pull on the mesentery it will be painful, so I would not advise anyone to work under a local anesthetic. Gas is excellent for these cases, because it does not produce nausea, because it does not favor vomiting, and the danger from having to institute artificial respiration is small.

I like the treatment the doctor gave the doubtful coil. The mode of operation which places part of the intestine outside and leaves it there for an emergency is not so pretty as where you do a laparotomy, do all the work inside, close up your patient and discharge him in a week; but it is much better to have a patient have three or four operations, even if he has to be in the hospital two or three months, than to do a quick operation with a quick death following.

There are many things which come to my mind in the discussion of this subject. When we have a case of band without perforation we can give a most favorable prognosis; but when you find a band don't jump to the conclusion that it is the only band. Often there is another one. As soon as I see one band I immediately hunt for the other one. Here, again, experience has to be your teacher. It is all right to look for the other band, but don't look too long. You had better look much than not enough, to be sure, but you must find the right medium. It is annoying to find the band causing the obstruction, to relieve it, and then to have the second band cause another obstruction as soon as the first one is out of the way. In the same way mesosigmoiditis is liable to cause trouble after you have relieved a band.

I believe that the four cases the doctor has described prove that his experience is far wider than these four cases. Anyone having these four obscure cases for his first would have a much higher mortality than 25 per cent., and he deserves a great deal of compliment for his excellent results.

Dr. A. J. Ochsner:—I believe the description given of these four cases is valuable to everyone who practices medicine, because these reports impress one with the fact that even apparently hopeless cases are worth an effort. There are a number of features which are especially interesting; for instance, the advice against eventration. Whoever has seen many operations for intestinal obstruction knows how the intestines try to get out and how they try to stay out, and Dr. Zimmerman has wisely said that next to resection of the intestines eventration is the most dangerous to the life of the patient.

In order to prevent eventration I have, of late, been using the Monk's glass tube. A glass tube about as large as the thumb and about  $2\frac{1}{2}$  feet long with blunt ends, affixed to a large rubber tube, is used for the purpose of emptying the distended intestines of their contents. After this is accomplished the tube is withdrawn and the opening in the bowel is closed and the infectious material washed out. If this decomposing matter is left in the intestine the patient will usually die within thirty-six hours. It is especially useful where the obstruction is not of the colon. I believe where there is obstruction in the colon the rule should be to make a colostomy and empty the intestines in that way and not attempt to empty them through a tube. I have foolishly attempted that, contrary to better judgment, and I shall in the future follow the old rule of making a colostomy in these cases.

Where the obstruction is above the colon, where you have simply a distention of the small intestines, or particularly a portion of the small intestines, there the use of the Monk's glass tube is of immense value, but the method of its use should be borne in mind. To introduce it one simply empties a piece of the intestines and has it held by one hand of an assistant on either side of the proposed opening, then place a circular suture around a space, then make a longitudinal incision long enough to put it in, then release the hold and immediately the gas and fecal matter in this portion of the intestines will go out; but the intestines immediately fall over the end of the tube and if you try to shove the tube into the intestines you will fail, but if you hold the tube quietly and double the intestines over it as you would draw a glove on your finger, you can thread it to the transverse mesocolon, and in that way have all the contents evacuated. Then

turn it downward toward the obstruction (taking for granted that the obstruction is in the small intestines) and empty that part. After you have evacuated all of it, fill the intestines with normal salt solution at 105 F. and your patient will be stimulated by the heat, which has a tonic action, and the remaining portion of the intestines is emptied. This can be done in a very few moments.

Dr. Zimmerman has wisely impressed on you the fact that you must not manipulate tissues too much. By using Monk's tube in this manner you clean the intestines thoroughly, and when the obstruction has been relieved there is not a lot of septic material to pass through the remainder of the intestines, and we have the advantage that eventration is not needed and your patient is relieved of the bad effects of having the decomposing material pass through the other portion of the intestines. The cleansing of the intestines in this manner is much to be preferred to making an enterostomy in cases of the small intestines.

The fact that we cannot lay down any definite rules for operation in these cases should be emphasized. We follow the fundamental principles that Dr. Zimmerman has named (which I will not repeat), and everyone who has encountered these cases will confirm every word that he has said. In making an enterostomy I think the plan of using a button is not, ordinarily, to be commended. I have used it many times until Moynihan's method of anastomosis was introduced because of the rapidity with which it could be done, but I had some worry with a number of my cases and in two cases (the last two) in which I used it I had calamities, and have since used the forceps for an enterostomy.

In cases where you are contemplating an enterostomy it is well to choose a point above the possible point of the formation of a thrombosis. In the last case which Dr. Zimmerman mentioned, where he left the intestine in the wound, had he reasoned it out so as to think it necessary to make an enterostomy in order to do the operation, the choice of location would have been difficult—a point at which he could have been certain that there would be no thrombosis of the vessels during or immediately after the operation with consequent gangrene—so this was much the better plan, even if he had been compelled later on to overcome the obstruction by making an incision.

The old rule which Dr. Zimmerman has mentioned is still a good one—to find out what you are about, find out the location of the obstruction by determining the end of the distended or the end of the contracted bowel, and then the point which Dr. Ries has mentioned should, I believe, be emphasized over and over again, that it does not make any great amount of difference to the patient exactly what the pathologic diagnosis is so long as the patient gets well. So long as you relieve the patient it does not make any particular difference whether the obstruction is 4 or 16 inches from the ileocecal valve. The most important thing to the patient is that you do not kill him in making your diagnosis—in order that your report may be absolutely exact to the minutest detail.

Dr. Carl Beck:—No doubt very few disagree with the opinion expressed by Dr. Zimmerman that prompt and effective surgery should be done in cases of acute obstruction. For chronic, of course, these rules do not apply quite so closely. In the acute cases it is absolutely essential that we do as little as necessary to get through quickly and establish a passage.

There are many interesting points about his cases, and every one of them struck home with all those who work in this line. We have all had our experiences doing four, six and eight operations on the same patient to close intestinal fistulae which result after each operation, and it does not make much difference, if the patient can stand it, so that in the end we have restored them to perfect health.

Some years ago I presented in this society a case on whom I had done eight laparotomies for such a fistula. I mention this case because it had some important features. There was a Murphy button retained in the patient for thirteen years, which did no harm whatsoever. The pictures which I have recently taken show the button still in the same place. A sidetracking operation to restore the bowel was done twice. We finally succeeded in restoring the track of the bowel.



There was a side-track of some 12 inches on one side and 4 inches entirely cut off from the general track. The mucosa of the bowel was prolapsed, and at first had a very peculiar discharge. Sometimes there were colon bacilli and sometimes there were none, showing that there was sometimes transmigration of the colon bacillus and sometimes there was not. The most interesting fact, however, was the button lying there all that time, causing no symptoms. I think that this case proves that the retention of the button does not always do harm, although now, having such excellent sutures, we do not have to use it quite so often.

The temporary exposure of a part of the bowel for the time being to watch whether it will be restored to function or not is also an interesting point. In the case Dr. Zimmerman mentioned, I believe he showed wisdom in leaving it outside, because one does not always know how far the gangrene extends. You cannot say just where it will set in. The immediate union of two such places might be followed by fistula after resection. I have had cases in which life of the bowel was not restored, such a case where the sigmoid was so distended that when I opened the abdomen it appeared like a gangrenous cyst; later I saw that it was part of the bowel. The gangrene extended clear down to the mesentery. The patient lived and with the exposed bowel discharged the gangrenous parts, but, unfortunately, septicemia set in. Had the patient lived it would have been interesting to watch the results.

Dr. Fenton B. Turck:—One interesting point occurred to me in this discussion, which is an important item in every case of obstruction which I have seen in the last fifteen years; that is, the increase in virulence of the microorganisms above the point of obstruction. The *Bacillus coli*, which under normal conditions produce no bacilli under conditions present in obstruction, immediately assume a greater virulence, as is shown by intraperitoneal injection of the cultures in rats. The *B. coli* taken from the normal individual and injected into rats show no effect, but taken from the individual who has an obstruction and injected into a rat, the rat dies within nine hours, so it will be distinctly seen that we are dealing with an increased virulence of the *B. coli*.

The idea of draining which Dr. Ochsner mentioned is particularly valuable because of this fact, and the preliminary operation, enterostomy, is a life-saving procedure. If we allow the toxic material to go on down the alimentary tract there would be more absorption of the toxic substances and our patients would not do so well.

May we not hope that in the future where we have indications of obstruction or increased virulence of the *B. coli* we will at once give it attention? I would suggest the ingestion of liquid vaselin after operation, also greater care in feeding, allowing no proteins. I feed 2 or 3 ounces of liquid vaselin three or four times a day, and it inhibits the growth of the microorganisms and prevents the increased virulence, because the colon bacilli develop in the partly digested food material and the liquid vaselin prevents the bacilli from taking up the nutritive substance that develops virulency. It stimulates peristalsis and is very good in these cases, because it supplies a protection to the entire mucous membrane. Then if you feed your patients on a starch diet until all danger is past you will have much greater success with this class of cases.

Dr. E. J. Senn:—I reported a series of five or six cases of intestinal obstruction some years ago, all acute. In each I did a simple enterostomy and all recovered. They were not selected cases. I just mention this fact to-night because it rather corroborates the bacteriologic studies of Dr. Turck. I should like to ask Dr. Zimmerman whether, in his opinion, three of these cases would not have recovered had he done an enterostomy. The consensus of opinion has been to do an enterostomy in cases in which the patient is moribund or in a weakened condition, because you do little mutilation and the patient readily stands the operation. Dr. Zimmerman may have made the patient's life much more certain in each of these cases by doing as he did, but I should like to have his opinion as to whether or not he thinks they would have recovered had he done an enterostomy.

## THE MODERN OPERATIVE TREATMENT OF VARICOCELE OF THE SPERMATIC CORD

AIME PAUL HEINECK, M.D.

## DISCUSSION

Dr. Carl Beck:—The varicocele is a pathologic condition with which we have to deal very often. It is an important subject, and it would require a great deal of discussion to go into the different points which the doctor has not read because of lack of time. He has left out entirely the pathology, symptomatology, etc., but has gone very nicely over every point of indication and the technic of operation, even though he had to do so hurriedly in order to reach the description of his own method.

From what I see the method is a combination of a method used by the French, resection of the scrotum and a resection of a part of the veins.

I may say that I have used Narath's method, and it has appealed to me because I could avoid the lumpy condition of union of the resected vessels which resulted when I used silk. I have been somewhat unfortunate in my cases since quite a number suppurated, even with catgut and strict asepsis.

I think the doctor's suggestion a good one. It appears from the pictures to be a formidable operation, but I think it is simple and the results would be very good. He may be able after he has had a large number of cases to report what the results are. For the present I think I shall adhere to excision of the vessels only.

One pathologic point which the doctor mentioned: there has been for a long time a discussion of the pathologic association of varicocele and tumor of the kidney. I have paid attention to this and have not been able to detect it. I have looked over the literature of the subject and have found it referred to as a symptom of tumor of the kidney present in a limited number of observations.

Dr. William Fuller:—Varicocele is a condition offering practically no difficulties in its diagnosis and presents as few obstacles to its successful cure. Varicocele of the pampiniform plexus of veins occurs more frequently on the left than the right side; is a condition, as Dr. Heineck has well said, calling under some circumstances for methods of treatment less radical than others.

Varicocele is a lesion so simple and so manageable that one might, on first thought, see little need for further discussing it. But I am sure that the subject as it has been worked up by Dr. Heineck will prove of use and interest to those who desire a comprehensive understanding of it. Causes of dilatation in veins is primarily due to increase in intravenous pressure and increase in the volume of blood occasioned by some obstruction of greater or lesser degree to the return blood currents. This, as has been many times shown, is due to numerous factors: undue length of veins, lack of circumferential support, a better example of which nowhere exists than in the scrotum. The dependent position, course and freedom from valves, as pointed out by Brinton and others, together with the peculiar manner in which some veins empty themselves or the angles at which they join other veins, explain satisfactorily the etiology of this pathologic condition.

The pregnant state affords indisputable evidence of the close relation of pressure to dilatation of a venous trunk. Pregnancy frequently exerts such pressure on the return venous blood from the lower portion of the body that varices occur to a very marked degree. But even better proof of this correlation is the immediate disappearance of these larger and distended veins after the interruption of pregnancy. Congenital weakness or abnormality in venous walls and coats may contribute to their future distensibility and without the mechanical features concerned in most cases, produce typical varicose veins.

In all that I can now recall on this subject nothing suggesting a relation between the redundant scrotum and varicocele has ever been mentioned. Such a relation is barely possible. A redundant scrotum is frequently seen without varicocele and varicocele exists without an elongated or overstretched scrotum.

Scrotoectomy, therefore, is a needless and unwarranted step in the treatment of varicocele.

An incision directly over the varicocele 1 inch long—2 if need be—with scrotal and cord tissues held between the thumb and fingers will cause the spermatic veins, when reached, to “elbow” their way into the incision. Double ligature is then thrown around the veins an inch or more apart, depending on the degree of shortening required in the cord. This procedure can be done in five minutes, with local anesthesia or gas as desired; it is bloodless, attended by no after discomfort, and will not fail to effect a cure in practically all instances. The scar is not visible after a few weeks, the scrotum is not disfigured and a suspensory bandage is rarely ever needed afterward.

Dr. F. A. Leusman:—What with the lateness of the hour as well as the length of time it would take Dr. Heineck to read his paper, we have been able to get but a few excerpts. When, however, you will read the paper as it will appear in *THE JOURNAL* I believe you will agree with me that this production is one of the best monographs written on the subject for the last twenty years.

There are a few points which I should like to enlarge on. First, as to the place. The operation can be done at the office with a local anesthetic, single handed. The hospital with numerous assistants, of course, is more comfortable.

The choice of the operation is a resection of the veins at a point a little below the external abdominal ring. Here, surgically speaking, we have but two structures to cut—the skin and the spermatic fascia. The diseased veins, usually the anterior ones, are then double ligatured enclosing the spermatic artery, care being taken when approximating the stumps to suspend the testis at the proper height. If there is present an associated hydrocele, fibroma, lipoma, tubercular epididymis, etc., it is most easily disposed of according to the needs of the occasion. The only thing that needs sewing is the skin. Resection of the scrotum is unnecessary unless the scrotum is pathologic, when Dr. Heineck's suggestions as to method will prove of decided value.

There are some dangers to the operation apparently. I know of a case of gangrene of the testicle following a varicocele operation performed by one of our so-called master surgeons. The reason for this unfortunate occurrence is not known to me.

The blood supply to the testis is derived from the spermatic, deferential and cremasteric arteries. In doing the operation you have no time to dig out the spermatic artery. Therefore, this artery is sacrificed and cut off with the varicose veins. If you save the deferential and cremasteric arteries and the epididymal veins, afferent and efferent circulation will prove ample, and if, in addition, the genital nerve, lymphatics and sympathetic nerves are respected, the result will be satisfactory. It will prove good policy, however, to tell your patient that in a number of cases of varicocele due to celibacy the testis of the affected side is already partially atrophied. Though an accompanying hydrocele led the patient to believe that his left testicle was unusually well developed, the removal of the veins and the removal of the hydrocele revealed the true condition, and unless the patient was forewarned, he blames the operator most unjustly for the atrophy of his testis. As to infection, I was fortunate so far in escaping occurrences of that kind, nor can I see any special danger from that source.

Then as to the after-effects, aside from gangrene, infection and testicular atrophy, I will emphasize the not altogether so very rare appearance of secondary hydrocele.

With regard to the etiology of varicocele, I believe I can say what Dr. Heineck probably knows, but did not wish to voice. Varicocele is a disease incidental to civilization, and the limitations it imposes on gratification of even legitimate, natural procreative desire. The desire for food (which includes shelter) and the desire for reproduction are the fundamental human motives. Generally speaking, science subserves the food problem, the sexual problem underlies most forms of art, as music, painting, etc. These problems and their emblems frequently intertwine.



Sexual desire colossal in its vehemence at times symbolizes creative art and its wonders; hence we find phallus worship to be the oldest of all religions. Unbeknown to many, the model of the modern church spire symbolizes the phallus of the ancient worship of creation, the cross symbolizes sexual congress. It is utterly unreasonable to make the statement and impossible to sustain the theory that man, mature man, if normal in his anatomy and physiology, can be continent, sexually continent, for indefinite periods of time, or his life, without falling below his own best possible standard. The sexual function is fundamental and cannot be disregarded as an act of (impossible) volition. Man or animal either copulates or masturbates, at intervals. The cause of varicocele is ungratified or improperly gratified sexual desire. There is no other cause or causes.

Dr. C. C. Rogers:—I have had the pleasure of reading Dr. Heineck's very exhaustive paper in full, and I regret that it could not have been presented in its entirety to-night. One point which appeals to me as very important has been omitted, and the only one which I care to enlarge on: whether simple dilatation of the spermatic vein will produce the pain which many patients suffer. Many of the patients have small varicocele, or they have read the literature distributed by quacks, imagine they have the symptoms described and seek medical aid for their relief. Some have neuralgia of the testicle which is worthy of our consideration. Because a patient with a varicocele has pain in the testicle one must not immediately jump to the conclusion that the varicocele is the cause of all the pain. I have seen many young men with pain in the testicle and varicocele go through an operation and to the surprise of themselves and the surgeon have the same pain as they had before and practically just as much of it. Examining further the testicle was found to be nodular, a subcutaneous tubercular test was positive, and tubercular bacilli found in the testicle after its removal. I have seen three cases treated for varicocele that were tuberculosis of the testicle. Because a patient has enlargement of the vessel or pain, we cannot jump to the conclusion that they have varicocele and nothing else. No operator should discharge his patient without examining further to see whether there is something else causing the pain. If we find nodules in the vessel we should be careful, if we operate, to expose it and examine it to see whether it is diseased, and we should elicit whether the patient has tuberculosis. These examinations should be made before we subject them to the primary operation. Sometimes we do not, in what we consider minor operations, examine our patients enough to know whether the pain is caused by the varicocele or some disease of the testicle.

Dr. Aime Paul Heineck, closing the discussion: The advantages of the technic for scrotoectomy which we practice and which we recommend are:

1. Rapidity and simplicity of execution.
2. Adaptability to the cure of relaxed pendulous scrotum, irrespective of cause.
3. No special instrument is required. No clamps are used.
4. Effective control of operative hemorrhage.
5. Effective prevention of post-operative hemorrhage.
6. Safety and efficacy. As remarked by E. Wyllis Andrews (whose operation bears some resemblance to ours), if the veins of the scrotum are dilated, scrotoectomy aids in correcting this condition by suppressing the lower loops of the dilated scrotal veins.

It is my opinion that in idiopathic varicocele the best results are obtained by the performance of the double operation: resection of the lower portion of the varicose veins and amputation of the relaxed and pendulous scrotum. In cases complicated either by an inguinal hernia, or by an encysted hydrocele of the cord, or by a congenital hydrocele, I follow Chavrier's suggestion<sup>1</sup> of ligating the spermatic veins close to the deep or internal abdominal ring. Often here, one can place the ligature around the main trunk of the spermatic veins. The advantage of this high ligation is that it enables one to avoid the inclusion in the

1. Gazette des Hôpitaux, 1910, 83 Ième année, p. 601.

ligature of the spermatic artery. The occlusion and resection of the spermatic artery influences unfavorably the nutrition of the testis. Operations for the removal of the internal and of the external saphenous veins have demonstrated that the partial resection of venous channels is innocuous. After resection of the spermatic veins, the collateral circulation is taken up by the deferential, the cremasteric and the scrotal veins. Bennet's operation: the complete division of the whole spermatic cord with the exception of the vas deferens and its vessels, we consider dangerously radical and we counsel its non-practice. Narath's operation should not be performed, if the varicocele be not coexistent with a hernia. It needlessly weakens the abdominal wall. It is well, that the type of varicocele, symptomatic or idiopathic be determined in each case. Symptomatic varicoceles are usually painless and do not disappear upon assumption of the recumbent posture. Varicocele of the spermatic cord can co-exist with disease of the testis and as Dr. Rogers has so well stated, the symptoms of the testicular affection should not be attributed to the varicocele, and both existing conditions should receive appropriate treatment. It is needless to say, that there are many facts that tend to confirm Dr. Leusman's statements concerning the etiology of varicocele.

*Regular Meeting, Dec. 7, 1910*

A regular meeting of the Chicago Medical Society was held Dec. 7, 1910. Dr. Alex. H. Ferguson, president of the society, occupied the chair. Dr. T. D. Crothers, Hartford, Conn., read a paper (by invitation) on "Home and Office Treatment of Inebriety and Alcoholism." Dr. Winfield S. Hall read a paper on "Some Recent Advances in Our Knowledge of Nutrition." Dr. Charles B. Reed read a paper on "The Indications and Technic for Artificial Dilatation of the Os at or near Term."

HOME AND OFFICE TREATMENT OF INEBRIETY AND ALCOHOLISM

T. D. CROTHERS, M.D.

DISCUSSION

Dr. G. Frank Lydston:—One of the points that impressed me very much in Dr. Crothers' address was the stress he laid on the experiments made on certain students to ascertain the effect of alcohol. I think we all have noticed a tendency in late years to condemn the use of alcohol in therapeutics, and such experiments as he cites here are about as logical as most experiments are on which such opposition is based. The deductions made from experiments on normal animals and human beings are about as useless as it is possible for them to be, and I think there will be a reaction before long from the illogical deductions now being drawn.

For all that has been said to the contrary, I believe that alcohol has a distinct range of value, but in courtesy to Dr. Crothers I wish to say this somewhat apologetically. I wish the doctor had given us something of the comparative statistics of inebriety.

So far as the disease theory of inebriety is concerned, I think that has reached a point where it may be said to be firmly established in the mind medical. I don't think it necessary to emphasize the fact that the great majority of physicians regard and treat it as a disease. We often hear the argument that the inebriate is a criminal—that he was a normal human being, that he wilfully brought about his condition, therefore he is responsible for it and should be held accountable. Sufficient account is not taken of the fact that no individual can indulge in alcohol for long without becoming diseased, it makes no difference whether he was originally normal or not. When we are confronted with an inebriate, we are face to face with a diseased individual; whether his disease was brought about by his own acts or not makes little difference in the course we should pursue in the treatment.

I wish the doctor had laid a little more stress on the physical side of the inebriate and particularly the physical deficiencies that underlie the weak will.

We often make the mistake of failing to take into consideration the fact that often the individual is not known to have a weak will until he has shown it in this way.

I think we have often been remiss because we have prescribed alcohol without carefully discriminating between those who are feeble willed and those who are able to withstand its temptations. I recall a case of a man who had not touched a drop of alcoholic liquor of any sort up to the age of 38. He was normal in most respects but had had in young manhood a localised tuberculosis and a head injury. At the time of which I speak he had been operated on for appendicitis and during convalescence the surgeon prescribed alcohol and within ninety days that man could not get alcohol enough.

The building up of the physical constitution in chronic inebriety is our chief therapeutic asset. I do not think much of drugs, except for the effect they have on the patient's mind. There is no reason why we should not take advantage of the psychologic element, which the quack is so quick to ferret out, but the building up of the physical man is the real curative factor.

I have a friend who is engaged in slum work and besides many other things, he takes particular interest in alcoholics. Something like eight years ago he volunteered to turn over some inebriety cases to me and he surely did his best to send me the worst cases he could find in the city.

The first one he brought seemed to realize his difficulty and the state he was in pretty clearly. He said he wanted to quit but did not have the will. He was about the toughest looking specimen I had ever seen. I really did not know whether I should be able to do anything with him, but in order to get him into a frame of mind where I could work with him, I told him he was altogether too far gone. I refused to take any interest in him until he was in an antagonistic frame of mind where he was begging me to take him and would do as I ordered. Then I took him out to a farm just outside the city and put him in charge of my overseer. I put him on strychnin for a day or two, then gave him some colored placebo solutions and pills, and kept him at work out of doors constantly from morning until night; telling him when he felt that he was capable of facing the city he could let me know. At the end of ninety days he told me he thought he would like to come back to the city. I gave him a new suit of clothes and a little money to start on and the next time I heard from him he was a temperance worker and afterward I heard that he had become a Methodist preacher.

The second case sent to me was even harder. The first man was about 52 years old. This one was at least 10 years older. I followed the same course and he also followed in the footsteps of the first man, becoming first a temperance lecturer and afterward a preacher—which might be taken as backsliding. These cases are still "cured" after a period of eight years.

This brings me to the point of believing that radical change (the simple life, if you wish to call it so) and constant out door employment is the best possible cure for these patients and I believe that if some wealthy man interested in philanthropy would undertake the establishment of farms on the outskirts of the city where inebriates could be kept for a time and given a chance to work, much good could be done. All drug therapeutic work, whether reputable or not, is based on wrong premises. The essence of our therapy should be outdoor living, free from city influences, and building up the physical constitution so that the will power will be restored. I think if we, as physicians, can interest philanthropists in such a project we will work much good; for work of this sort certainly is far-reaching in effect in a sociologic way.

My idea would be that the farms should not be large, or the patients numerous. The patients should be kept, as I kept these two individuals, constantly busy.

I took these two subjects merely as an experiment, but I do not see why the same results would not be obtained in treating a large number of patients. I believe that the coming treatment is the care of the individual's physique and his constitutional upbuilding as a means of strengthening his will.



As matters now are we are almost helpless in the matter of control of the inebriate. There is not a physician in this city who does not do more or less of this kind of work, and who does not know a large number of inebriates who have been a source of danger to their families and friends. If the physician had recourse to some legal procedure which would place them under arbitrary control, he might effect a cure and restore them to their families as useful citizens. You know that, as matters now stand, if they come to you you can relieve the present emergency, but you have no means of preventing them from returning to the same condition.

Families often appeal to you to save their loved ones. What is needed is some sort of a legal system of control. That is something we should all strive together to bring about; a means whereby a confirmed inebriate may be remanded to some institution and kept there until he is cured. The Washingtonian Home is the worst fake on the face of the earth. They treat the men as criminals instead of diseased human beings and are as far as possible from doing them any good. The institution is merely a safe harbor for "sobering up" and the treatment of delirium tremens.

In the course of my sociologic work I ran across a recent method of handling the inebriety problem in London. When we handle this question we handle many others which are branches of it. A law is in force in London which makes it a criminal offense to sell to a chronic inebriate. This applies not only to the keepers of the low doggery, but to the keepers of high-toned restaurants and the managers of clubs. In a fashionable club if a man is known to be an inebriate he is served only at great risk to the manager. Photographs are obtained of inebriates, and resort keepers are supplied with copies for purposes of identification, and if the keeper of a resort of any kind sells to that individual serious trouble results. There was also a law enacted providing for the punishment of anyone taking a child (particularly a girl child) under 13 years of age into a resort of any kind where liquor is sold. Within a very short time the number of cases in the police courts that were remanded for various offenses after the enactment of this law was reduced enormously. I do not remember the exact figures, but it was something like 75 per cent. less than the ordinary number of cases in the police courts before the law went into effect.

We are lamentably deficient in this country in remedies for this evil and I think something could be done along the lines I have suggested. Certainly the physician should try to do more than to simply sober up drunks. We have not only the fostering of legal measures on our hands, but the responsibility of the education of the public in the inebriety problem.

V. H. Podstata:—There are perhaps three points on which I would be in a position to say a word; about the importance of inebriety and the result of alcoholism on the nervous system: it is beyond question that at least 25 per cent. of the patients admitted to the Dunning Hospital for the Insane come there as a result of drinking. That alone, if there was nothing else to consider would make it quite a problem for every physician, because inebriety must be handled in the beginning if it is to be handled at all.

That inebriety is a disease I do not think there is the slightest doubt. In my opinion the predisposing factor of inebriety is always a condition described by the French as nerve instability. If you will analyze your patients carefully you will see that this is true. It has not started with an impulse to drink, but with a condition of instability that compels the individual to take a stimulant. It is usually liquor first, then morphin and then cocain. It is rarely that this order is varied.

I look on the condition as a disease, always due primarily to nerve instability which requires the attention of the physician and in all too many cases the physician does not carefully study his patient before prescribing.

Dr. Lydston has mentioned one thing which cannot be too strongly emphasized: when we prescribe alcohol we should be very sure of our patient, because the habit of alcohol drinking is often started from receiving remedies containing it.

We many of us see people drink alcohol in fairly large quantities every day who do not show any signs of it. It is a peculiar thing and rather difficult to account for, particularly when we consider the experiments made. I must say that, so far as I know, tests have always resulted about as Dr. Crothers has pointed out, but yet there are these people who take it daily and show none of these results. I have seen them frequently where they show no physical signs whatever, no mental signs and (considering their age) no arteriosclerosis. I do not know how to explain it, but perhaps someone can throw some light on the subject.

As to treatment: I usually have a number of cases in the hospital and I have seen them in various stages from delirium tremens to hundreds of cases of chronic alcoholic intoxication, starting with moral degeneration as a result of alcoholism and running down to alcoholic paralysis (which title I use apologetically, not because it is the correct term but because it best describes the condition). When I come to treat them I find it far more difficult than one would be inclined to think. It is comparatively easy to take a man who has been drinking and give him a dose of apomorphin and quiet him; it is excellent, but it is not really treatment. It is also comparatively easy to take large doses of bitter tonics, such as have been mentioned, and certainly there is no doubt but that we can influence the patient to a certain extent with nux, atropin and strychnin, but how long is that going to last? My experience has been that it does not last very long. While I have seen many men leave institutions when they were in good physical health, when they were willing and able to promise anything on earth, I have seen the same men come back again, just as bad and worse in a comparatively short time, so that my view of the situation is rather hopeless—not absolutely so, but not exactly optimistic. I am free to confess that we, as physicians, shall have to deal with patients not only from the purely physical standpoint (because we are really dealing with sick men) but we will have to have some dealing with them from the psychologic standpoint and the sociologic as well.

I do not see why the practitioner should not be thoroughly acquainted with the methods of mentally influencing people, not really practicing mental healing, but in a certain degree I think it is time we got into the homes and dealt with that side of the man. It is really necessary that this should be done. I think there are many places in the course of their treatment when they need words of encouragement and friendship quite as much as anything else. Medicine is necessary, but I believe that without some psychologic influence permanent results cannot be obtained.

I believe that alcoholism is on the increase. The figures show that not only a larger amount per capita is taken but that a larger number of people are being influenced and these facts merit serious consideration.

Dr. Julius Grinker:—I believe we are all grateful to Dr. Crothers for having brought the subject to us as he did, for although alcoholism has been discussed for centuries, it has not always been brought home to us in the best way. I came here with the hope of hearing something new on the home and office treatment of alcoholism and inebriety. Personally I feel somewhat disappointed, though others may not be.

The treatment outlined by Dr. Crothers has been the accepted treatment for years and has failed times innumerable. It constitutes the essence of the so-called "Three Day Cure" and of the Keeley Cure; but most of the patients relapse after such cures.

Before I proceed to state what I think is the best treatment I wish to call attention to a few points in Dr. Crothers' remarks that need correction. He told us of the delirium of language characteristic of cocaineism. I feel tolerably certain he was not in earnest about that. If he really was, then he fell into the error of Max Nordau, who could see nothing but evidences of mattoidism and epilepsy in the writings of our most celebrated authors. If Dr. Crothers is correct, then

we must consider the brilliant writers of medical and lay literature—some of whom have been very prolific—as cocain and morphin habitués.

A word about the carrying of fire arms: one who carries a revolver in his pocket may be a person who is afraid of real or imaginary enemies. In a city like Chicago, where hold-ups are of nightly and daily occurrence, many people carry fire arms. Should an individual from Chicago, still carrying his weapon because ignorant of the perfect safety of the streets of Hartford, choose to make a friendly visit at Dr. Crothers' institute, the doctor would immediately suspect him of cocainism before he uttered a word!

The essayist has said nothing on delirium tremens. Not rarely the practitioner is called to a patient supposedly suffering from typhoid fever or pneumonia, but in reality the subject of an attack of delirium tremens. As time does not permit to enter into symptomatology, I will suggest something practical in the way of treatment. In the Cook County Hospital, where we have frequent opportunities of treating cases of delirium tremens, we have found that small doses of morphin sulphate, say one-sixth of a grain every three hours until five or six doses have been taken, will often abort an incipient case of delirium. Needless to state that other treatment and proper feeding are not neglected.

In speaking of the drinking habit as a diseased tendency, a so-called neuropathy, the doctor omitted to state that the inability of certain individuals to taste alcohol without getting intoxicated or even becoming sick, in other words, the intolerance for alcohol in any form, is another expression of the same neuropathic constitution. The fact that certain individuals take to drinking to excess as a fish takes to the water, while others cannot drink at all—not even a drop—would show both types to belong to a common family. Of the interchangeability of alcoholism and teetotalism I can give many illustrations, but one will suffice: I have in mind a friend of mine, a resident of this city, whose father had been a confirmed drunkard all his life, but who himself had inherited a most pronounced intolerance of anything alcoholic and in consequence is a natural-born teetotaler. We shall have no difficulty in finding a similar type of neuropath among our American temperance cranks. The Germans can drink moderate amounts of beer without becoming alcoholics. The normal individual, in my opinion, is neither a drunkard nor one who shows intolerance to even small quantities of alcoholic drinks.

We neurologists have been up against the drink problem for years. We have had patients suffering from all forms of alcoholism, beginning with the alcoholic neurasthenia, down to alcoholic polyneuritis, alcoholic hallucinosis and paranoia. When informed that their symptoms were caused by alcohol and that recurrences are sure to take place if the taking of alcohol is resumed, they invariably swear that not another drop will ever pass their lips again. But no sooner have they turned their backs on the hospital when they relapse into their former habits. What can we do for these unfortunates? Neither quassia nor apomorphin will cure them. They should be detained in some institution for the inebriate during a period of at least six months, should be under constant observation and should receive treatment directed toward strengthening their weakened wills. That treatment will be most effective which reaches the patient's heart and brain. One might call this treatment "moral" treatment, because the patient is to be educated to believe in a better life and that there are higher things in this life than the mere satisfaction of the senses. In such instances the doctor becomes a teacher of ethics. Are we kind to the patient when we take him in for three days, sober him up and then turn him out, leaving him entirely to himself, the worst imaginable company for him? This great city should have a place to which alcoholics could be sent as patients to be treated for their infirmity: under existing conditions he is taken care of only after he has become insane. We are far from a solution of every phase of this question. Although not for a moment underestimating the good to be derived from the immediate symptomatic treatment of acute and chronic alcoholism, we are still looking forward to methods of treatment which shall yield permanent results.



T. D. Crothers (closing the discussion):—I cannot say very much in reply except to confirm the statements made and to say that a larger experience will alter the opinions of many people a great deal.

There is no one line of drugs that is going to restore a drug taker or an alcoholic, but each case is a law unto itself. It is a simple matter to treat a drug taker. It is a large matter to cure, but it is being done. Suggestion, hypnotism and any sort of treatment that restores the disordered brain and gets the patient to think and live better constitutes good treatment.

I feel grateful to the members of this society for the honor of the invitation to address you and thank the gentlemen who have discussed this subject. It is much bigger than anything else before us and another generation or more will discuss it before we can reach any sort of conclusion.

#### DISCUSSION ON THE PAPER OF DR. HALL.

Dr. Fenton B. Turck: A paper of this kind should not be so hastily gone over. It covers such a vast field that only a master of physiology could condense so much into a little space. Dr. Hall is to be complimented upon the view he has given us of the modern advances in the science of nutrition.

The formation of secretin (a hormone) in the stomach is very important. Secretin is not produced by the mastication of food, but by the products of pepsin digestion in the stomach taking place after the "early digestion" due to psychic secretion. When secretin passes into the circulation it reaches the gastric glands and stimulates them to activity.

The absorption of these products becomes exceedingly essential in the whole process of digestion, and in pathologic conditions are frequently the key to a group of symptoms. While not the subject of this paper—it being so closely related to it—I wish to bring up the point that the food shall be thoroughly and completely digested in the upper alimentary tract and thus leave no residue of albuminous substance to act as toxins and furnish the intestinal flora with nutrient diet.

The last point I wish to mention is the question of low protein diet. I am thoroughly in accord with the conclusions of both Foley and Chittenden, and there is no use denying the brilliant results they obtained, but we also know clinically what an excessive amount of protein will do. Weir Mitchell gives large amounts of protein substances for the purpose of stimulating all the organs of excretion. When we have patients at a low ebb of the vital forces, it may be that we must at times give more proteins than are usually given to stimulate the organs to their work; the liver, the kidneys, and all the organs must be stimulated to do their work just as well as it is possible to make them, and there may be times in our practice when an excessive protein diet is the only means at our command to stimulate these organs of the body. On the other hand, the excessive use of proteins is not only often dangerous because of the extra work thrown upon the liver and kidneys, but the fact that there is a large amount of the protein not absorbed, furnishes a nutrient media in which micro-organisms readily develop. We use bouillon to produce cultures, because it is the richest substance we have to grow micro-organisms and produce their toxins, and we have, therefore, another argument for low proteins, but we cannot make the sweeping statement that the low protein is always best, for it is not quite settled whether man can live his best at such low protein scale. It has been developed that athletes can do their work, but it is not yet established that it is best for all men to live on "threadbare" protein diet.

#### *Regular Meeting, Dec. 14, 1910*

A regular meeting of the Chicago Medical Society was held Dec. 14, 1910. In the absence of the president of the society, Dr. John T. Manierre occupied the chair. Dr. J. H. Schroeder, Cincinnati, read a paper (by invitation) on "The Present Status of the Cammidge Reaction." Dr. Edward F. Wells read a paper on "Management of Failure of the Circulatory Balance in Chronic Interstitial

Nephritis." Dr. M. R. Barker read a paper on "Acute Post-Operative Dilatation of the Stomach Following Gastrojejunostomy."

#### DISCUSSION ON THE PAPER OF DR. SCHROEDER

A. J. Ochsner:—Those of us who have been interested in the Cammidge test are, of course, familiar with what Dr. Schroeder has been doing the last five or six years in this department. My own interest dates back to the beginning of this work by Cammidge because it was started in connection with the work of Mayo Robson, with whose work I have been familiar for many years.

When he first made these observations he communicated the facts to me directly and as my assistant, Dr. John L. Yates (now of Milwaukee) was in England, he went to Leeds and saw Dr. Cammidge make these tests on cases under the care of Mayo Robson and brought over the method.

We were very enthusiastic over the idea of having something that looked like help to make a diagnosis in a condition which at that time was rather difficult. Of course when the condition of the pancreas is so serious that it can be diagnosed by the examination of the feces, when you can make a positive diagnosis, then the case is clear enough so there is no difficulty; but it was in cases in which the question lay between the duodenum, the gall-bladder, the stomach and the pancreas. At that time none of us had so much practical experience with these conditions as we have now after opening the abdomen in many cases and demonstrating the presence of the condition. One examines a patient to-day and tells him positively that he has an ulcer of the duodenum, where five or eight years ago an equally careful examination would have left the surgeon entirely uncertain. Simply from constant repetition we acquire a form of diagnostic skill which means that we are familiar with the condition. At that time we had not had this experience, so we were very much interested in the experiments, and Dr. Yates being a thoroughly trained man from the University of Pennsylvania, Johns Hopkins, and the Wisconsin University, having gone through years of careful laboratory training, seemed to be just the man for the work, so we examined every case in which we were to have an opportunity for manipulation of the pancreas and he made his test and said "this is positive," "that is negative." Then we opened the abdomen for whatever operation we had, stomach, gall-bladder, duodenum, or whatever we were to operate on and examined the pancreas invariably; and this is the conclusion we came to: Dr. Yates found that when Cammidge had a certain condition he could reason from the condition and vary his experiments a little this way or a little that way and could say it is positive, or it is negative, after these slight variations; while if Dr. Yates undertook the same variation it would really mean nothing to him—in other words, Cammidge is a physiologic chemist and so things which indicate that this or that means this or that, mean nothing to a laboratory man who is not an expert in this especial field.

I can readily see how the experiment can be accurate, notwithstanding these facts. One would think that a scientific experiment would be made exactly after a formula, but there is the personal element in it and when a man has the training and skill in that line that Dr. Yates has and cannot accomplish what Cammidge and Dr. Schroeder can it seems to me to be tremendously interesting and worthy of further study by men who are experts in this field; but examinations made by men who had not this training would be useless to consider of diagnostic importance.

What Dr. Schroeder has said of the experiments at Rochester illustrates the same thing. There is no man of my acquaintance whose accuracy of judgment is more sure than that of Wilson. He is a man of extensive qualifications. The picture which presents a certain condition to Pilcher (who is a young man) means that he reads his history and his test-tube together. To Wilson, reading the same test-tube means just exactly what is in that test-tube and nothing more, while with the younger man the whole picture and the history have a bearing.

Now I am sure that with an expert like Dr. Schroeder, or Cammidge, there is the same accuracy in such a test that there is in a mathematical formula, but with those having less skill that is not the case. I have another reason for my belief. There are few surgeons who are so acute in their judgment as Robson and Moynihan of Leeds. I asked these men directly concerning the accuracy of the Cammidge test and they told me they could depend on it. Knowing of the experiments which Dr. Schroeder has made, I am convinced that the same is true of his work.

A. Gehrmann:—I think Dr. Schroeder is deserving of the thanks of the society for the summary he has given us of the value of this test. So far as the reaction is concerned: it seems to me from my experience of several years that the reaction is definite. We have made a sufficient number of them to eliminate the few difficulties which at first presented. The chief one, of course, being the presence of sugar in the urine as shown by using ordinary tests. We first thought it sufficient to try the ordinary tests to pronounce the specimen one satisfactory for use in the experiment, but afterward found that other tests had to be made to find that the specimen would be satisfactory.

Then, having a satisfactory specimen, running it in duplicate and with proper checks in the manner described, the appearance of the crystals at the end of the experiment are certainly very definite. Either the granular material remains or the crystals appear and anyone who has seen them once can be satisfied of their presence or absence.

As in many other tests, so in this one, a single test is too often relied on for a diagnosis. Reaction is reaction and its presence or absence is determined to help us along diagnostic lines. What is particularly needed is more experimentation along the lines of animal work, as Dr. Schroeder has brought out.

So far as its clinical use at present is concerned, it seems to me it is not popular because of the class of conditions in which it is to be used. These are not so frequent and they are a class of cases which very often pass as some ordinary disturbance of the gastro-intestinal tract and proceed without any special investigation, or they are malignant cases, dying without accurate diagnosis; and also because of the time-consuming and careful technic that has to be followed in making the test.

The only thing that will lead to a proper placing of the value of the Cammidge reaction will be the careful following of the case by the surgeon, perhaps the presentation of the specimen for careful microscopic or post-mortem examination. The tests should be made by some one who will simply make the test and report his results as negative or positive. In order to be a good test, of good value, we must know first exactly what it means, and second, whether it occurs in these conditions or not.

J. H. Schroeder (closing the discussion):—I am fully conscious of the effect that the personal equation has on the making of this test. I referred to the tests made by Pilcher because they have been published. He was very definite in his tests. The subsequent tests by Wilson were published in August. In the first Pilcher did not know the history or the end and that illustrates the element of personality.

I would disagree with the speaker who said that the work under Wilson was not positive. His findings were very definite. So far as to what you see under the microscope: there is no question about it and no difficulty in carrying on the examination if you follow the directions given by Cammidge and he is very positive in them. You must absolutely follow the technic laid down and then the findings will be positive or negative as the case may be.

#### DISCUSSION ON THE PAPER OF DR. BARKER

Emil Ries:—This question has always been handled under two headings which demonstrate two theories: post-operative acute dilatation of stomach and arterio-mesenterial occlusion of the duodenum. There are some things to be said in favor of each and a few things which do not agree with either. In favor of the



theory that there is always an obstruction of the lower part of the duodenum by the artery is the fact of the surprising (practically regular) success of the treatment built on this purely mechanical theory. The result of evacuation of the stomach by the tube and the supposed release of the pressure on the duodenum by turning the patient on the stomach seems to speak absolutely in favor of the mechanical obstruction.

Some other points in its favor might be these: the compression of the duodenum is supposed to be brought about by the root of the mesentery. This root is pulled on and put on a stretch by the mass of small intestines falling into the small pelvis and held there by its own weight.

In favor of this hypothesis we might compare for instance conditions in which it is impossible for the small intestine to fall into the pelvis and become confined, to that of patients put to bed for diseases of various kinds, ptomain poisoning, typhoid fever, etc.; now compare with the number of patients who take anesthetics and have this dilatation the untold millions of women who have children and are put to bed for varying periods of time. In the whole history of obstetrics I don't know of a single case of dilatation of the stomach not complicated by sepsis. This would agree well with the mechanical theory, the uterus filling the pelvis for a time at least.

Then it has been claimed that the mechanical theory does not explain all cases because the weight of the small intestines would be insufficient to pull with such an energy as to compress the duodenum. It has been mentioned in this respect that the small intestines after operation would usually have more weight and a greater pull because usually the intestine is emptied before operation and there is no gas left in the small intestine by which it may be borne up.

In this regard it might be interesting to report my own experience because I have for years advocated that no such emptying of the intestines should precede laparotomies. Therefore the patients on whom I operate usually contain the normal amount of feces and gas, nevertheless I have seen post-operative dilatation of the stomach in three cases. One operation was outside the peritoneal cavity (operation for hydronephrosis); the other two were less satisfactory examples because they had operations on the bile tract and this location of the operation favors dilatation and green vomit, etc. This idea of the empty bowel producing the pull on the mesentery cannot be retained.

The idea that there is a mechanical obstruction of the horizontal part of the duodenum cannot possibly prevail in cases where there is an opening from the stomach into the intestines below the point where the mesentery runs across the duodenum. Suppose in the doctor's case there had been a simple mechanical obstruction of the lower duodenum: that would not prevent the stomach from emptying its contents through the gastrojejunostomy opening below that point.

It is interesting that in the doctor's case, as well as in two stomach cases I had, the dilatation did not immediately follow the operation at all. In the doctor's case it was on the tenth day, in one of my cases it was on the eleventh and in the other on the twelfth. In both of my cases, as well as in the doctor's there was an opening below the superior mesenteric artery.

Now how about the theory of acute post-operative dilatation considered as a primary condition—the real condition? If a toxin is produced by the administration of an anesthetic and is the cause of this paralysis of the stomach (which must be at the base of this theory) then it is hard to understand why the toxin should begin to work ten days after the operation when the effect of the chloroform or ether must be absolutely gone. Chloroform and ether, as well, cannot be demonstrated more than three or four days at the outside after the operation even with impaired excretory organs. If such an acute dilatation developed immediately after the operation it would be conceivable that a toxin, a chemical substance, might be the cause of the paresis of the stomach, but how about the cases where there is no question of toxin and no question of anesthesia? There is a case of a nurse who took a quantity of more or less decayed beef and was taken sick immediately afterward. Two cases which I happened to see in the

literature did not follow any disease or any anesthetic. Sometimes the patient is taken in the midst of health: where is the toxin in these cases? There is nothing to show any.

On the other hand take the statement that the stomach walls are paralyzed, therefore give way better and more easily than the opening in the pylorus or the opening by the gastro-jejunostomy: what do we find if we clean out the stomach as soon as the symptoms are clear? Does the paralysis show? No! If we diagnose early and start the treatment, the stomach contracts down and stays down—not always immediately, but in a goodly number immediately. How about that paralysis? How about that toxin?

There is something in that problem that we do not know. It seems such a simple affair and yet there is always some hook or crook which destroys the nicest theory we have been able to spin.

If we go so far as to assume involvement of the vagi, pulling on the vagi which are afterwards easily relieved and released by change of position, then we could prove our assumption by experiments. There has been quite a series of experiments reported in a German journal by Braun and Seidel which I read some time ago and they came to no conclusion whatever. No amount of experimentation with the vagi produced this condition.

There is a nice little problem here which is worthy of careful study and experimentation.

William Harsha:—As Dr. Ries has said, the discussion of this subject is largely academic. The general fact that acute dilatation of the stomach is not limited to post-operative cases has of course been known for a good many years, probably sixty or seventy, but especially for the past forty; and the post-operative variety in the past twenty. The best review of the subject made recently, which I have seen, was Laffer's (of Cleveland) two years ago. In that he reported one case which occurred after confinement. The fact that it occurs where there had been no anesthetic, and that it has occurred after amputation of the hip-joint and various operations not in any way involving the stomach would seem to set at naught a good many of our theories.

I am not sure that the essayist is right in the belief that the consensus of opinion is that it is a gastro-mesenteric ileus. I believe it is not taken to be a mechanical condition by most surgeons. There may be cases of that kind, but it is very difficult to understand how a mechanical occlusion at this point could produce such a rapid and complete obstruction, and such a hyper-secretion, with so little pain. It is true most authors speak of pain as one symptom, but we can conceive of no sudden, complete occlusion of the intestinal tract without more pain than most of these cases evidence. They come on rather insidiously, although it may be suddenly.

I have had but one case, not exactly like that of Dr. Barker, inasmuch as there was less secretion following the operation. The operation was done for an umbilical hernia. The intestines were not handled at all and everything seemed to go on all right when very suddenly, at the end of the fourth day, the dilatation occurred with very little pain. Lavage was done promptly. In this case there was a history of alcoholism. Some cases are reported occurring as late as thirty days after the operation. It seems impossible to account for it as a toxemia or due to the anesthetic.

At the present time I believe it is a paralysis, but we have to do with a condition which is not always the same: therefore the etiology may not always be the same.

Referring to the experiments: experiments were done by Carrion and Hallion some four years ago, cutting the pneumogastrics in a dog and producing a dilatation: that is probably more in point than any other work I have seen. A great deal of ingenuity has been exercised in trying to bring about this condition.

We have not fully developed the etiology, but this is only one of a number of things which surgery has to investigate further.

E. F. Wells:—Before Dr. Barker closes his discussion I should like to ask him to give us some information as to the character of this 46 pounds of liquid removed from the stomach, also what (if he knows) brought it forth—whether it was the dilatation of the stomach which drew it out, or some other of the existing conditions?

### CHICAGO OPHTHALMOLOGICAL SOCIETY

*Regular Meeting, Oct. 17, 1910*

A regular meeting was held Oct. 17, 1910, with the president, Dr. W. A. FISHER, in the chair.

#### INJURY TO EYE BY BUCKSHOT

Dr. George F. Suker reported the case of a young man who in 1903 was shot in the right eye with buckshot. Several shot passed through the nasal wall, entering the left orbit, scraping the upper portion of the globe and causing partial detachment of the retina. Sight was fairly good for about five years, when it began to fail, gradually getting worse and worse. A skiagram was made and showed that a shot was pressing on the optic nerve. The disc was partially choked in the upper quadrant from the pressure. A Kroenlein operation being possible, the shot was extracted from the optic nerve. Vision then was about three feet. Four weeks afterward vision was 20/100 and has remained so.

#### OPTIC NEURITIS TREATED BY TUBERCULIN

Dr. W. E. Gamble reported the case of a physician suffering from an optic neuritis in which excellent results were obtained from the injection of tuberculin.

#### DISCUSSION

Dr. L. E. Schwarz had a case similar to Dr. Gamble's due to grippe. He had one hundred and five fits, extending over a period of eight or nine years. During that time the field for form perception never suffered material damage, whereas the fields for colors fell and rose and then settled down to about the size they were when at their best. He did not suffer a marked contraction in any field except for red. Vision was 20/20 throughout. There was a marked optic atrophy.

Dr. E. K. Findley saw this case in the early stage, but the fact that vision was markedly reduced made the prognosis unfavorable. Under mercury the patient grew worse. Tuberculin seemed a last resort, and it was rather surprising to note the amount of vision the patient now has with so much atrophy.

#### A CASE OF SUDDEN BLINDNESS WITH OBSCURE ETIOLOGY

Dr. H. B. Young, of Burlington, Iowa, reported the case of a patient under observation eight years. At first the right eye had very poor vision, 20/130. There was a considerable deposit on the posterior lens capsule. Vision in the right eye was 20/30 plus, with a small amount of astigmatism against the rule. The left eye remained unchanged; the right eye steadily grew worse. In July, 1910, vision in the left eye suddenly failed. It was 20/100 plus. Pulse was slow; blood-pressure slightly below normal. When stepping on a chair or stepladder the patient had a sense of falling backward. The nervous reflexes showed no special changes. He had no headache. In the left eye the disc was pale and blurred. Since July he has taken increasing doses of iodids, without any effect. The tension of the globe is the same to-day as it was in July. He did not think that it was a case of atrophy because, if so, there would have been a steady decline.



## DISCUSSION

Dr. Henry Gradle said that he could not see any change in the optic disc, and that the slight blurring seemed to be due to optic reasons, haze in the vitreous, or on the posterior surface of the lens.

Dr. Oscar Dodd was not at all sure as to whether the nerve head should appear as it did. The pupil was not dilated and therefore the fundus could not be examined thoroughly. He had seen these cases with fine dots on the posterior surface of the lens, which have remained nearly stationary for a long period, and then showed a degeneration of the retina, much as this case did, but the change was a gradual one and not a sudden one, as in this case. He agreed with Dr. Gradle that the blurring and appearance of the disc was due to the reasons here given.

## UNUSUAL MAGNET CASES

Dr. W. A. Fisher reported three cases. The first patient nine years ago had a piece of iron fly into his right eye. Attempts were made to remove the iron by operation, but failed. Three years ago glasses were prescribed successfully for headache. Recently the eye became irritated and presented the picture of beginning iritis. A foreign body could easily be seen in the anterior chamber, the end sticking into the iris. The lens was absent, the capsule only remaining. Tension was normal. The next morning the piece of iron was easily removed with the giant magnet. It was more than one-quarter inch long. Vision is 20/20.

The second patient was struck in the eye by a piece of metal passing through the lower lid into the conjunctiva. A probe could be passed through the opening to the eyeball. An opening was made above and to the temporal side and with great difficulty a piece of iron, 5 mm. long, 3 mm. wide, and  $1\frac{1}{2}$  mm. thick, weighing 2 grains, was removed.

The third patient had a piece of metal enter the eye through the cornea, passing through the iris and into the posterior chamber, where it could be seen lying on the retina. The lens was not injured. The foreign body was too large to admit of its being drawn into the anterior chamber without injuring the lens; therefore, it was removed through the sclera, first making a conjunctival opening. Three weeks after the operation vision was 20/30. The case is unusual in that the foreign body was removed through the sclera.

## ANATOMICALLY MISPLACED PUNCTA

Dr. Clark W. Hawley reported the case of a man, seen five years ago, who complained of epiphora which evidently had troubled him all his life. When he attempted to probe the passages and pull down the lower lid, he noticed the punctum pointing upward from the upper surface of the lid edge. There was an absence of the punctum on the lachrymalis. The other eye presented the same appearance. There was no eversion of the lid margin. Otherwise it was normal in every way. The punctum was about 2 mm. from the edge of the lid and led directly into the canaliculus. Instilling cocaine a few times, he inserted a knife into the punctum for a short distance, then turned it backward toward the eyeball as far as possible, and made a slit just sufficiently long to extend down the inner surface of the lid about two or three millimeters, the direction being at an angle to the margin of the lid, backward toward the inner canthus. The patient recovered completely.

A second patient, aged sixty, presented the same condition, except that the puncta were situated back a little from the edge of the lid, not quite so far as in the first case. The same operation was performed, with the same good result.

The third patient, a middle-aged woman, presented the punctum on the upper surface of the lid on the left side only.

In the fourth case the puncta opened directly upward. The same operation proved to be sufficient to give relief.

The last case was one of absence of a punctum, the canaliculus being present. A punctum was made successfully, the same course being pursued as in the cases of misplaced punctum. This patient, too, recovered.

#### DISCUSSION

Dr. Oscar Dodd saw one of these cases which had been exhibited before the society. He personally had one case of congenital absence of the punctum, but in this case he could not find a canaliculus.

#### METHOD OF DECOLORIZING THE CONJUNCTIVA IN ARGYROSIS

Dr. L. E. Schwarz employs a method which consists of injection into the conjunctiva of potassium iodid in saturated, half saturated or 30 per cent. solutions, the strength depending on the reaction following each treatment. With the smallest needle of an ordinary hypodermic syringe and a broad-sided forceps, a puncture of some portion of the stained area is made and the needle is passed superficially 8 millimeters or more into the substance of the conjunctiva, care being taken to keep parallel to and as near the surface as possible. Three or four minims of the solution are injected very slowly. If the discolored area is extensive and the reaction is slight, the injection may be repeated at a point as far removed as possible from the first. When all irritation has subsided, which usually requires from two to three weeks, the injection may be repeated at other points, until the stained area has been well traversed. The effect of the potassium iodid as far as decolorization is concerned is progressive and slow, but certain, producing an almost normal color in the conjunctiva. He has used this method since 1905, with unvaryingly good results.

#### DISCUSSION

Dr. L. M. Grosvenor saw some of Dr. Schwarz's patients and on inquiry learned that they were using a 5 or 10 per cent. solution of argyrol or protargol at home for some inflammatory condition. They keep the solution on hand and instil it from time to time, as they deem it necessary. The result is the argyrosis. Patients should be warned not to use such solutions indiscriminately.

In a case of dacryocystitis occurring in an old lady he injected argyrol into the puncta and canaliculi. Some of the solution trickled down through the nose, and soon there followed a little bulging of the lower lid. Five days later she returned with an inflammation. An argyrosis followed. He warned against the too free use of these solutions in lachrymal troubles, because of the tendency of the fluid to extravasate.

Dr. Thomas Faith referred to a report made by a French author some years ago on the use of a solution for the cure of incipient cataract. He tried it in several cases, but the patients complained of much pain. In some a severe chemosis occurred, which remained for ten or twelve days. He attempted to make the injection subconjunctivally, but pain resulted nevertheless. Then he used some soluble iodine solution, supposed to be non-irritating, but the result was no better than from the use of the iodid of potash, except that there was no pain.

Dr. Willis O. Nance has seen many cases of argyrosis. In one case the stain was caused by the use of nitrate of silver drops prescribed for home use by a foreign physician. There was an area comprising fully four-fifths of the palpebral conjunctiva, of a dark blue or blackish hue. He thought Dr. Schwarz's method practicable, but failed to see how it is possible to inject the solution into the stroma.

Dr. Harry Woodruff stated that there are some rules which should be followed in these cases, and one is never to use any preparation of silver in the eye for more than thirty days. That is about as long as the tissues will stand it without becoming discolored, that is, a 10 per cent. solution. Another rule is never to use any preparation of silver as an injection into the lachrymal sac, because one never knows when the canaliculus may be punctured at some point and a serious condition follow.

Dr. Major Worthington inquired whether Dr. Schwarz had used this method in cases of stains about the eyeball. He had an unfortunate experience in injecting a very weak solution of argyrol in a case that had been probed and where he thought he had passed the probe into the nose. Subsequently he found that there was a false passage. A marked stain was produced. Although it is gradually fading now, after two years, there is still some discoloration.

Dr. W. A. Fisher said that if he had to choose between injecting argyrol and protargol into the lachrymal sac and removing the sac, he would favor removing the sac, despite the fact that the injection method is apparently a very simple one.

Dr. Robert von der Heydt did not think it so simple to successfully remove the sac, and prefers to inject it for a period, and as argyrosis is really a very rare complication and due to forced hypodermic-like methods, why deprive patients of a treatment which is effective? After irrigating the sac with boric acid solution, instil a drop of argyrol or protargol solution. In a second it is regurgitated at the top punctum. The tissues are thereby reached by the silver solution in a manner in no other way possible.

Dr. L. E. Schwarz said that there is more or less pain and the more perfectly the procedure is carried out, the greater the pain. That is why one should not attempt to do too much. It is difficult to keep close to the surface in the case of a mucous membrane as thin as the conjunctiva, yet the results justify the procedure. Only three minims are injected, as a rule, even allowing for the small size of the drop coming from a small needle. The injected fluid seems to penetrate the tissues. That is why no pressure is made at the time the needle is withdrawn. There frequently is some reaction in the way of swelling, but never amounting to very much.

As to Dr. Nance's remarks, the reason he laid such emphasis on the fact that he did not want it understood to be a subconjunctival injection is because of the usual definition placed on such injection. It means the needle going down into the deeper tissues, whereas he keeps the needle as close to the surface as possible. He has not had a case of argyrosis of the conjunctiva of the bulb, and thought it would be rather difficult to make an injection in such a case because of its extreme thinness. Results can be obtained with greater readiness and ease in the case of integumental staining, because the needle can be inserted easily into the proper place.

#### HYPERTROPHY OF TARSUS

Dr. C. J. Swan reported a case with a negative history. The only possible manifestation of inflammation was an occasional edema about the lid. The change in the tarsus was first noticed about two years ago. Since then it has gradually increased in size, most of the hypertrophy being on the skin surface, so that it is impossible to turn the lid. There is no irritation or reaction of any kind.

#### DISCUSSION

Dr. O. Tydings had a case somewhat similar to this. There was a decided thickening, more so than in Dr. Swan's case, although not so much broadened out. It had been treated for some time as a trachoma. It had existed for about three years. There was no involvement of the other eye. He used tuberculin and got a response. The patient improved under tuberculin injections, but finally disappeared from observation, so that no report can be made on the further progress of the case.

#### PULSATING EXOPHTHALMOS

Dr. Francis Lane reported a case where the patient was struck on the head with a brick, about three months ago, the result being a fractured nose. After about twelve days there was marked ectropion of the lower lids. The lids were so chemotic that nothing except the conjunctiva was exposed in the lower lid. The upper lids were edematous and chemotic. Both corneæ were exposed. Cultures and smears were negative, except for diplococci, Gram-negative, and the xerosis bacillus. The lids were so very edematous that it was necessary to do



a canthotomy. The conjunctiva was scarified vigorously. Vision at the time of entrance was about 8/200 in both eyes, but improved gradually. After about ten days it was 20/50 in the left eye, and 20/100 plus in the right eye. Potassium iodid was given. After another ten days' vision in the left eye was about 20/30. Right eye 20/50. By oblique illumination the iris in the right eye was seen to be muddy. The patient developed an iritis. In the right eye there was enormous dilatation of the retinal veins. There were many small hemorrhages around the disc. The patient had the three cardinal symptoms of exophthalmos, the pulsation, the bruit and the exophthalmos. The patient described the bruit as a blowing murmuring sound in the left ear. The condition was bilateral, which could be accounted for anatomically, he thought, because of the connection between the right and left sides of the cavernous sinus. Nasal examination and the skiagraph were negative. The bruit was readily heard objectively. To-day vision in the right eye is 20/20, and the eye can be compressed without producing pain. Pulsation was continuous over the left temporal region, rather accentuated during systole. The only treatment given aside from the local treatment was potassium iodid.

WILLIS O. NANCE, Secretary.

*Regular Meeting, Nov. 21, 1910*

A regular meeting of the Society was held November 21, 1910, with the President, Dr. W. A. Fisher, in the chair.

CONGENITAL ABSENCE OF OPTIC DISC

Dr. Clark W. Hawley presented a girl, aged 12 years, who complained of failing vision, first noted five years ago. Retinoscopy showed mixed astigmatism. Correction did not improve vision, except to make it brighter. Fundus showed the blood-vessels as in the normal, but entire absence of the disc. There was no sign of an exudate. The retina and choroid were clear and distinct. None of the blood-vessels are obscured. In the left eye, especially, there is a peculiar reflection along the blood-vessels which looks like an exudate, but it changes its shape and position. The circle of light can be followed through the vitreous and there is a reflection back from the vitreous, but by careful watching one can see the blood-vessels in nearly all directions. It is evident, he said, that there is a congenital malformation in the posterior portion of the eye. The visual fields were not reduced.

DISCUSSION

Dr. Thomas A. Woodruff called attention to an article by C. H. Beard in the *Ophthalmic Record* for June, 1901, in which is reported a case of absence of the optic disc simulating choked disc.

Dr. Brown Pusey thought that he could see the outlines of the nerve-head in the right eye.

Dr. E. V. L. Brown was unable to find any evidence of a disc, but he thought that the vitreous was changed quite a little and suggested that there might be present a remnant of the embryologic vitreo-glial structure, which might account for the condition. The type of disc corresponds to type one of Elsnich's classification. There might be, he said, some change in the transparency of the normal glia both in the vitreous and retina.

LYMPHANGIECTASIS MULTIPLEX

Dr. J. F. Burkholder reported the case of a woman, aged 30 years, who complained of headache, failing vision and a feeling of roughness in the eyes of three or four weeks' duration. Vision was: O.D. 20/50; O.S. 20/60. Glasses relieved the headache, but were not comfortable. The bulbar conjunctivæ of both eyes showed many straight chains of multiple, moniliform injections or dilatations radiating outward from the cornea to the fornix, and measuring about .75 mm. in

diameter. Pressure emptied these dilatations of a colorless fluid. There was no evidence of conjunctival injection. There was also marked corneal disturbance. A curved band of infiltration, 2 mm. wide, extended horizontally across the left cornea, the convexity facing downward, the upper border passing across the lower pupillary area. This band was nebular in character. The cornea was not rough. It extended to the sclera on either side, where there was slight vascularity. The right cornea was clear, except for a small phlyctenular elevation at the nasal corneo-scleral margin in the region of the palpebral fissure. This was circumscribed by a narrow area of vascularity with its greatest width on the scleral side. This became vascular, then pustular and finally broke down, leaving a marginal ulcer, which was exceedingly persistent.

#### MODIFICATION OF SCHIOTZ TONOMETER

Dr. H. Gradle exhibited an instrument that differed from that of Schiotz in mechanical detail only. The foot-place is somewhat smaller; the stylet is only 2.5 mm. long, and the exchange of weights is more simple. The least imperfection, even an erosion of the cornea, is registered by the instrument.

#### LYMPHOCYTOSIS IN PERFORATING EYE INJURIES

Dr. H. S. Gradle has examined the blood of patients who sustained a perforating wound of the eye and where other causes of leukocytosis could be excluded. He divided the cases into three classes. In the first class were 18 cases, in which the injured eye was removed because of the fear of sympathetic ophthalmia. In each case there was an increase in the number of mononuclears of from 20 to 80 per cent. In the second class were 21 cases, where the wound healed spontaneously, or where the eye had to be enucleated on account of early panophthalmitis. In all these cases the blood was normal. In the third class were 13 cases of iridocyclitis of various forms which could in no case lead to sympathetic ophthalmia. The blood was normal in every case. He said that in cases of perforating injuries which would lead to a sympathetic ophthalmia and where the mononuclears are decidedly increased an acute aggravation of the iridocyclitis is at times shown thirty-six to forty-eight hours before the clinical manifestations by a further increase in mononuclears of at times 20 per cent. Within two to four days after enucleation of the injured eye the blood count falls to normal and remains there.

#### DISCUSSION

Dr. H. Gradle has followed this in his own practice recently. The first two instances were very striking. The first case was a perforating injury resulting in a rent through the cornea, exposing the anterior chamber and two or three smaller rents which did not perforate. The larger wound remained open for five or six days. Although the lens was not injured, the clinical aspect was threatening, due no doubt to the infiltration caused by all injuries. The wounds healed slowly. The blood count was normal and the patient recovered without any permanent injury except a blur from the central scar running through the middle of the pupil.

In the second case a wire passed through the cornea into the lens. The eye did well except for some flushing when it was exposed to the light. Toward the end of the sixth week a few spots of keratitis punctata appeared. The eye was enucleated. During the entire six weeks the blood was as reported by Dr. H. S. Gradle. In three other cases the blood count was normal with slight daily fluctuations.

Dr. E. V. L. Brown referred to the opinion given by McElroy, of the Moorfield clinic, that the infiltration is a plasma cell infiltration rather than a mononuclear leukocytosis. The observation has been uniform in eighteen or twenty cases. In Fuchs' clinic these cases have not been checked up on account of the improper stain used. However, the plasma cell infiltration was a typical one. If, he said, the lymphocytosis can be shown to be a constant differential point between an eye that may cause sympathetic inflammation and one which will not, it is exceedingly valuable.

Dr. Gradle, in closing, said that Dr. Ormond, of Guy's Hospital, London, working independently, found the same thing, but he maintains that the increase was due to the large lymphocytes and not the small ones. However, that is a difficult matter to determine, and is really one of personal equation. Dr. Gradle has used the differential stain for plasma cells, but at no time has he found anything resembling them, either Ehrlich's variety or Turk's Reitzungs or irritation forms.

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### M'LEAN COUNTY

The McLean County Medical Society met in regular monthly session at the City Hall, Bloomington, December 1, 1910, with Dr. E. Mammen, president, in the chair. No reports were made by the board of censors nor the committees on judiciary nor hygiene. A suggestion was offered that a recognition of any venerable members who have practiced medicine fifty years be made. A motion to do this at some later date prevailed. Reports of cases were omitted. Dr. J. Whitefield Smith's paper, entitled "The Development of Medical Education in America," was then read.

After a very excellent historical sketch and a thorough exposition of the relation of the public and the government to medical education, the paper was open to general discussion. The following visitors took part in the discussion:

President Kemp, of Wesleyan, said he was edified by the paper. He confessed a realization that medical education bore a more important part in practical or general education than generally believed: that health journals, fad treatments and suggestions by laity, etc., were not scientific and did not enlarge the reasoning power nor add to real knowledge.

Reverend Pickard said that the professions were not revered so much as formerly. The man of ability is regarded even more than formerly. Medical education has been too much of a physical education, not enough psychical; that this branch, namely mental science, was being taken up outside of the medical profession, but it properly belonged in medical education.

Hon. Edmund O'Connell said the masses try to get wise but must depend upon medical lore for relief, and that confidence in a properly educated medical profession should be constant; that no millennium was near and that the guide posts of science were our only hope.

Professor Stapleton, superintendent of Bloomington schools, thought that medical men had always been noted for magnanimity and were to-day in the foreground in advancement for public good, as shown by the recent anti-tuberculosis campaign in this city. He welcomed medical supervision of the schools. He would cooperate with them in discovery of diseases, and in stamping out infectious diseases.

Professor Moore, County Superintendent of Schools, felt that a round-table session of medical men and teachers would be of great public good. A book entitled "Civics of Health" was now in the hands of many teachers. Public health and school hygiene is one of the strong points in our city schools and we are trying hard to help the rural teachers up with the advance movement. Illinois as a state is behind many neighboring states in these matters, but McLean County is trying to be an advanced county. Twenty rural schools have made building improvements with this object in view during the last year. To the medical men who can't see why the faker thrives he said ignorance of the masses is the whole reason.

Mrs. Morgan, director of the Brokaw Hospital, inquired how more stringent quarantine regulations can be obtained.

Rev. Zandt said that the narrowness of the profession is widening, the general uplift is at hand, that these munificences are very laudable, and by some witty remarks impressed his points deeply.



Secretary Scofield, of the Y. M. C. A., admonished the laity and medical men to get together, to not be too modest and to make an outcry when the innocent were being duped by pretenders. We need a change of base. Medical men are capable, but should be public officers, custodians of health, rather than an emergency apparatus. There are places in the world where such is the case, and we can attain it here.

Drs. Taylor, Mammen, Dobson and J. W. Smith replied to the gentlemen who had favored us with remarks, stating that public co-operation with medical men meant advance; that it could be accomplished in that way only. If the first-class colleges only were educating all medical men there would be no fear of incapacity. The public might then easily protect itself from charlatans, poor quarantine and many other needless dangers with which they are now jeopardized.

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### MADISON COUNTY

The meeting of January 13 in Alton was very successful with four applications for membership and 20 members in attendance. Senator Beall's Bill amending the marriage laws was read, discussed and by resolution heartily endorsed. The death of Mrs. Susetta B. Yerkes, wife of our fellow member, Dr. T. P. Yerkes, being announced, the chair appointed Drs. Cook, Pfeifferberger and Halliburton as a committee on resolutions. Dr. Black's address on "Medical Education" was a masterpiece, and was thoroughly appreciated. He called attention to the marked contrast between the product of the commercial medical school and that of a first class college or university. He made a plea, from the standpoint of the patient, for a more thorough preparation of the prospective medical student, asked the cooperation of our members in the great task of weeding out the commercial college, and to encourage the larger institutions to put forth still greater efforts to raise the standard. It was a great address, and the thanks of the society were extended to Dr. Black for his efforts by unanimous vote. A resolution was also passed endorsing the action of the National Council in Education of the American Medical Association and pledging our support in all future efforts. Members in attendance were Drs. Luster, Tulley, Sims, Riley, Johnson, Wedig, Halliburton, Cook, Fischer, Jones, Pfeifferberger, Smith, Dugan, J. H. Fiegenbaum, Ferguson, Foulds, Wilkinson, Davis and the secretary. The society will meet again Feb. 3, 1911, in Edwardsville, with State President, A. C. Cotton, of Chicago, as principal speaker. E. W. FIEGENBAUM, Sec'y.

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### MORGAN COUNTY

The Morgan County Medical Society held its regular monthly meeting Friday evening, Jan. 13, 1911, at the Public Library, Jacksonville, Illinois, with the following members present: Drs. Cole, Crouch, Dewey, Gailey, Hairgrove, Hardesty, Milligan, Norris, Ogram, Reid, Stacy, Webster of Murrayville, Woltman and Gregory. Dr. H. C. Woltman, newly elected president, presided. Mr. Cummings, representing the Widenham and Daub water interests, spoke on the source, supply and potability of the water from the gravel beds north of the city. The recently elected secretary presented his resignation, asking that it be accepted on the ground that the Society is checking its progress and disrupting its organization by continually changing its secretary, but it was not accepted.

Two of the most interesting papers read in the society for some time, were read by Drs. George Stacy and Grace Dewey. The former gave a résumé of the recent literature on the "Ehrlich-Hata Treatment of Syphilis." The paper of Dr. Dewey dealt with the history and development of the "Wassermann Reaction" and though necessarily employing many technical details, was listened to with

considerable interest owing to its close relationship to the previous paper. The discussion of the papers was led by Drs. Crouch, Cole and Norris and was participated in with feeling by others after which the society adjourned.

A. R. GREGORY, M.D., Secretary.

### SANGAMON COUNTY

The annual business meeting of the Sangamon County Medical Society was held January 9, 1911, in the Lincoln Library, Springfield, Ill. The following officers were elected for the year: Dr. George F. Stericker, president; Dr. W. A. Young, vice president; Dr. O. H. Deichman, secretary and treasurer; Dr. George F. Stericker, delegate; and Dr. W. A. Young, alternate. The new members admitted to the association were: Dr. J. A. Wheeler, Auburn; Drs. E. B. Godfrey, C. C. Ellis and Franklin Maurer, Springfield.

A general experience meeting, participated in by nearly every one present, followed the election.

### STEPHENSON COUNTY

Report of the autumnal meeting of the Stephenson County Medical Association. The meeting was called to order by the president, Dr. A. E. Smith. The following answered to roll call: Drs. Best, E. H. Clark, Linda K. Hutchins, Harlan, Hewetson, Karcher, Lins, Leavy, Morrison, Peek, Phillips, Rosenstil, Stealy and Thompson. Dr. J. H. Stealy reported the autopsy findings in his case of splenic anemia that was presented before the society last July. He also reported a case of splenic enlargement in a young girl, the enlargement following an attack of pharyngeal diphtheria, which attack was the second endured by the patient within a period of two months' time. Another case presented by him was that of a young lady on whom he had done some plastic surgery for the restoration of function of the shoulder joint following an injury she had sustained wherein the head of the humerus was fractured at the anatomic neck. The doctor spoke of his former methods of dealing with such cases, wherein he had used the accepted treatment of the past, and had had uniform results that were not satisfactory. The head of the humerus was removed and fascia from the deltoid muscle was placed over the end of the bone. The young woman is now able to use her arm nearly as well as she could with the natural joint. X-ray plates were shown the members, demonstrating the relative positions of the bones before and after the operation, and all were impressed with the great freedom of movement of the arm and the absolute success of the operation.

Dr. A. E. Smith gave his annual address and urged in it that the members work together with a spirit looking toward the common good of all. Dr. W. L. Karcher gave a timely talk on the subject of the "Diagnostic Significance of Back-ache," and reminded us not to forget this important anatomic field with its fertile landmarks of diagnosis and indications for treatment. Dr. C. J. Leavy, who lately joined our society and is now practicing in Freeport, gave a scholarly résumé of his observations relative to the "Diagnosis and Treatment of Appendicitis," as now followed out by our leading internists and surgeons. Dr. Linda K. Hutchins read a paper on the subject of "Epidemic Infantile Paralysis." The doctor's paper was quite apropos, for within the past few days several cases have been noted in our vicinity which have proved to be this disease.

The name of Dr. C. F. M. Butterfield of Rock City was placed before the society for active membership, and on motion was ordered to be placed before the board of censors and to be reported at the next regular meeting.

J. SHELDON CLARK, Secretary.

## FRACTURES OF THE UPPER END OF THE HUMERUS WITH DISLOCATION OF THE HEAD, AND NEW JOINT FORMATION

J. H. STEALY, M.D., FREEPORT

1. Fracture of the anatomical neck alone or associated with fracture of the tuberosities.
2. Fractures of the greater or lesser tuberosities.
3. Epiphyseal separation.
4. Fracture of the surgical neck with or without impaction.
5. Dislocation of the head of the humerus combined with any of the fractures just named.

Diagnosis is not so easy in the non-impacted cases, even with displacement present. Much therefore depends on the degree of displacement and the movements of the shaft producing pain and the abnormal mobility. Where impaction of fracture exists all these signs are absent, and the diagnosis must be made from the history of the case, manner of the injury, change in the axis of the arm, and most important of all, by the *x*-ray. With the head of the bone in the glenoid cavity, and the contour of the shoulder, dislocation will be excluded.

1. Fracture of the anatomical neck is more frequently associated with dislocation of the head of the bone than a fracture through the surgical neck. The head may be entirely detached and lie in the joint cavity or be displaced in the axilla. Fractures of the anatomic neck of the humerus are regarded as very rare, i. e., where the line of fracture does not pass through the tuberosities and where the fracture is entirely within the capsule.

J. J. Buchanan published reports of the recorded cases of this injury in *Annals of Surgery* for May, 1908. He collected thirty-four undoubted cases and nine which were unverified by the *x*-ray.

Scudder believes that the fracture is frequently impacted and is not recognized by ordinary methods of examination, as the fracture is difficult of diagnosis and often impossible without the *x*-ray. With swelling and great pain in the region of the shoulder joint, with loss of function and when upward pressure of the humerus produces pain and erases pretty much all the deformity with or without crepitus, we are certain of a fracture.

2. Fracture through the tuberosities with fracture of the anatomic neck calls for the same treatment as fracture of the anatomic neck; if the fracture is through the greater tuberosity, then immobilization with outward rotation of the arm. If the lesser tuberosity alone is fractured, the arm should be rotated inward.

3. Separation of the epiphysis is most common between the ages of 6 and 18 years. It is treated by reduction under an anesthetic, with traction on the elbow, while the surgeon presses the upper end of the lower fragment backward and outward. With forward displacement you may encounter much difficulty in its reduction; here you must use extension and abduction of the arm, aided by pressure on the shaft of the arm. When the fragments become locked the difficulty of reduction is greatly enhanced.

4. Fractures of the surgical neck. When we have but little displacement with or without impaction, an effort at reduction is worse than useless and should be left alone. If the tuberosity or head is displaced by the lower fragment being wedged between them, the fragment may be loosened by gradual abduction of the arm so as to keep the ends in apposition. If reduction is impossible then the open method by incision must be resorted to.

5. Fractures with dislocation should be reduced as soon as possible; if not, this peculiar dislocation of the head, with an exuberant callus, gives restricted motion and becomes very painful from pressure. In fracture of the surgical neck with dislocation, if reduction fails by traction on the abducted vertical limb while pressure is made on the head with the fingers in the axilla, then the open method over the anterior aspect down to the upper fragment, and if the head is not easily reduced it should be removed.



Fractures do not exactly coincide with the limits of the neck. The use of the x-ray and the open method of treatment have taught us that fractures of purely the anatomic neck are very rare; but what actually does occur are fractures separating the head, but running through the tuberosities or below them. This we have verified in our four cases treated by the open method.

I report here four cases of fracture of a dislocated humerus with a sub-glenoid or retro-glenoid dislocation of the fragment, viz., the head. These cases, as you all know, are usually irreducible without surgical intervention, and often



then impracticable without inducing such a degree of trauma, not only to the soft parts, but to the hard parts as well, as to make its retention impractical. In our first three cases, the fractured fragment, viz., the head, was after replacement, which was difficult, attached to the shaft either with chromic catgut or aluminum wire. These cases made an immediately nice recovery anatomically, but functionally the joints were far from being satisfactory.

The skiagraph I here show you was taken from a female patient, aged 17 years, who was thrown out of a carriage, striking on the left shoulder. Her physician was sent for. Unfortunately, when he arrived there was already great

swelling and tumefaction of the parts, making a correct diagnosis impossible. The patient was anesthetized and an effort at reduction made. The end of the humerus was apparently put into place, but there was still something lacking to complete the symmetry and convexity of the shoulder. A mass was felt downward and inward and what proved to be the dislocated head beneath the glenoid process of the scapula, presenting very much the appearance of fracture and displacement of the glenoid process of the scapula, which was more accurately shown by the skiagraph some six weeks later, just prior to making a final effort at its reduction, which was unsuccessful. An incision was, in this case, made in the deltoid; but here the posterior incision would have made the fracture and displaced fragment much easier accessible, being not only luxated, but also rotated half way round on its axis. I found it practically impossible to replace, and so concluded to entirely extract the head, rounding off the upper end of the humerus and bringing the periosteum over it. We then dissected the fascia from the deltoid and parts of the adjacent biceps, swinging it around over the periosteum, covering the end of the bone and stitched into place. The capsule was then closed around the upper end of the bone and interposing fascia, thus making a new joint.

I here present the young lady who so kindly consented to permit me to show you what a useful shoulder joint she now possesses, which, if treated in the former methods, would have been functionally a useless joint.

#### CONCLUSIONS

1. Have a skiagraph of the parts as an accurate diagnosis; without it, it is impossible.

2. We do not believe it is possible to reduce this fracture when accompanied with a dislocated head, and more especially when the head is rotated on its axis.

3. By at once making an effort at reduction, if unsuccessful, the open method with the removal of the fragment or head with interposition of the fascia with the object of functionally forming a new joint, is the proper procedure, and will greatly shorten convalescence.

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#### ST. CLAIR COUNTY

The annual meeting of the St. Clair County Medical Society was held at the City Hall in Belleville, Jan. 5, 1911. About fifty physicians were in attendance. Interesting papers were read by Drs. Florence Evans of the Barnes Medical College of St. Louis and G. O. Otrich of Belleville. The following officers were elected: President, Dr. Charles Skaggs of East St. Louis; vice-president, Dr. G. C. Otrich of Belleville; treasurer, Dr. A. E. Hansing of Belleville; secretary, Dr. C. A. W. Zimmermann of East St. Louis. A banquet was given at the Belleville House Cafe at the conclusion of the meeting, an elegant menu being served by Mr. Schlosser.

#### THE VALUE OF THE LABORATORY IN CONJUNCTION WITH A CLINICAL DIAGNOSIS

DR. G. C. OTRICH, BELLEVILLE, ILLINOIS

The value of the laboratory methods of diagnosis in connection with the clinical findings is becoming greater every day. This is proven by the great stress laid upon this subject in the best medical colleges, by the amount of money spent for medical research along these lines in all our great institutions, and by the rapidity with which this sphere of medical science is progressing. The general professional man at large does not realize the importance of this and try to keep in touch with it and be progressive instead of retrogressive in his work.

We still find some physicians who condemn the simplest laboratory methods because they do not know the value of it. Why not the value? Because they don't knock the dust off their books and magazines to see what the world is

doing. When they go to the city for post-graduate work, instead of visiting a clinical laboratory and seeing these methods in vogue and making a study of the case or history of the case from which these specimens are taken and derive some value or benefit for their daily work, they look for the biggest surgical guns in the city. They will sit for hours and watch the blood flow and ask questions about the operation that they could not duplicate in years of practice, when they should have asked for the diagnostician of the institution and found out how the diagnoses of the existing conditions were made. What they have gained from the clinic is the same as what they would have learned had they visited a moving picture show of the same thing. Others visit the bed-side clinics of some of the most noted diagnosticians. They see them make the physical examination and hear the history reading. They give their diagnosis as though it was the simplest case in the category of medicine. It looks wonderful to the general practitioner the way these men make their diagnoses of some of the most complex diseases, in their simple way. It would not be so alarming to the visitor if he only knew that these men have a corps of men working in the laboratory, and that there is a laboratory report which they read before going over the case. Unless the practitioner has access to this report and thoroughly understands it he has gained nothing here, as there are so many pathologic conditions that we can not elicit by our five senses and there are so many diseases in which the physical findings have so much in common.

We know that the general practitioner has not the time to make a laboratory investigation of all his cases but he should be well enough qualified in elementary laboratory technic to know that there are ways and means whereby he can relieve himself of any uncertainty in regard to his diagnosis. So to give his patients the benefit of these sciences he should keep in touch with the microscopist upon whom he can call for assistance at any time. But he should not rely upon his associates for too much or he will become careless and neglectful. So to overcome the difficulty it is essential that every physician should have a knowledge of a certain amount of this technic that he himself can depend upon when in need. The trouble with a great number of practitioners is not merely the fact that they do not possess the knowledge but that they are negligent in their work.

The State of Illinois maintains a public laboratory for the benefit of physicians and the public. The men at the head of this institution are always complaining of the fact that physicians do not take advantage of it. It seems as though the physicians are doing the public a great injustice in that they who pay the taxes for the maintenance of this laboratory are not receiving the benefit of it. By referring to some of the diseases and pathologic conditions in which an early and accurate diagnosis is of the greatest importance, I will endeavor to impress upon you the value of the microscope and its chemical associates. One of the greatest mistakes and curses that comes to a physician is the inaccurate diagnosis of neoplasms. No man can by a macroscopic examination of a tumor distinguish with any certainty whether it is benign or malignant. Think how many cases could have been relieved or cured if the small, insignificant growth (as it was to the physician) had been properly diagnosed and radical treatment administered. Many diseases with a very different pathologic nature have a clinical picture so similar that a differential diagnosis is not probable.

The following case is to the point: A man, aged 35 years, had a growth about the inner canthus of the eye. History negative. Was diagnosed and treated by a number of reputable physicians for epithelioma, with negative results. A Wassermann was positive, and under mercurial treatment the tumor disappeared in a few weeks.

As it is the physician only who has the power to cope with syphilis, so it is the duty of each of us when he finds the first suspicious lesion to be on the lookout for the spirochete, or to make one of the several tests as the Wassermann or Noguchi, so as to be positive and if it exists to nip it in the bud and not wait until the secondary or tertiary lesions appear, for then there is the danger of further infection.



There is another group of diseases which can only be diagnosed by the use of the microscope and its chemical accessories. These are the diseases that affect the blood directly and cause the cells to undergo changes in accordance with existing toxemia. How many cases of anemia have been treated for cancer and tuberculosis? How many pounds of quinin have been given, where the malaria organism did not exist? We are all guilty, so is it not time to get right? To illustrate one case: a patient was treated for typhoid until a few days before death when a blood examination was made and the plasmodium malarie was found. It was then too late. So it is with typhoid. If the doctor would have a Widal or Diazo urinary test made it would save him much worry and embarrassment. There have been numerous cases of typhoid fever in the early stages operated upon for appendicitis. So in cases of abdominal operations a leukocyte count will make a great difference in your diagnosis, for when you expect a leukocytosis and find a leukopenia it puts you on your guard.

The examination of the sputum is one we all know the value of without discussion. I will therefore pass on to the stomach analysis. Is there any physician who has a chronic disease of the stomach willing to take a diagnosis of dyspepsia? I don't think so. But most of you are willing to give it, and when you do you are giving your conscience a placebo. Why not give your test meals and examine the stomach contents both macroscopically, microscopically and chemically; differentiate the cancer, ulcers, inflammations and neuroses in the early stages instead of waiting for the tumor formation of cancer, the perforation or hemorrhage of ulcer, or until the patient has become a hypochondriac from his neurosis. We know that two of the most important eliminatory systems are by the alimentary and urinary tracts. Through these most of the toxins of the body are disposed of. We all know when disease exists there is an alteration of the excreta and these are very seldom discernable to the naked eye. So these also will have to be examined in the laboratory to find out what physical and chemical change has taken place within the body. For instance, there can not be too much stress put upon occult blood in diseases of the stomach, and the finding and determining of the different nematodes that infest the alimentary canal.

Take notice how long the hook-worm has escaped the uncertain eye of the practitioner. It had to present itself to the microscope for investigation, and from the time and money that has been spent the last few years it shows that the discovery was of great importance and a signal for the physician to be on his guard. So it is with the examination of the urine. You know nothing until you give it the test. It not only tells of the changes that are taking place in the urinary system but by its relation to the rest of the body throughout the circulatory system, it gives the signal of distress for some of its distant constituents. By chemical analysis we can determine the extent of these functional disturbances of the constitution by determining the amount and variety of the acids, alkalies, proteids or carbohydrates that are being excreted through the kidneys. This organ itself has a very minute histologic structure, subject to a great many pathologic changes. By a microscopic examination of the urine to determine the character of these casts, cells and mineral deposits we can very readily form our diagnosis and prognosis of the lesion.

Right here let me cite a case to show what carelessness will do. A man, aged 63 years, had an itch for years. From what he said the doctors must have told him he had every disease in the dermatology. His history was mostly negative. I made a urinalysis, as a matter of routine, and found sugar. The diagnosis was therefore easy but the prognosis bad. He finally drifted to another doctor who treated him until his death. I asked the attending physician his diagnosis and he said cirrhosis of the liver. I then asked him if he had made a urinary analysis and he replied in the negative. Hence, you can readily see the false light under which the doctor and his patient were laboring.

In conclusion I wish to quote Dr. William E. Quine, the grand old physician of Chicago, "Any quack can treat a case but it takes a physician to make a diagnosis."

## NEWS OF THE STATE

### PERSONAL

Dr. and Mrs. William A. Haskell of Alton, have gone to Bermuda, to spend the winter.

Dr. E. G. Merwin, of Highland, was appointed county physician for Helvetia township.

Dr. Jacob Furstman, Chicago, has been appointed commissioner of health of Lacrosse, Wis.

Dr. and Mrs. Robert H. Babcock and family, Chicago, have gone to California for a stay of two months at Pasadena.

Dr. John Allen Cotton, Peoria, entered the state penitentiary, Joliet, December 28, to serve an indefinite term for forgery.

Dr. J. H. Bacon, Peoria, was operated on for appendicitis at the Proctor Hospital, December 29, and is recovering nicely.

Dr. Edward Engel, of Prairietown has gone to Oak Grove Hospital, Flint, Michigan, suffering with a severe attack of neurasthenia.

Dr. Claude Tilleson, an intern at the Henrotin Memorial Hospital was painfully burned while acting as Santa Claus at a Christmas celebration at the Nurse's Home of the hospital.

Dr. T. P. Yerkes of Upper Alton, one of the oldest and most popular members of the Madison County Medical Society, has returned from Rochester, Minnesota, where he underwent a serious surgical operation.

According to the Bulletin of the Illinois State Board of Health for December, there are six physicians in the forty-seventh general assembly: Drs. John H. Gray, Morrison, and James A. Womack, Equality, in the Senate and Drs. James H. Bell, Rochester; I. N. Martin, La Harpe, W. E. Stedman, Sullivan, and Hall Whiteaker, Mound City, in the House of Representatives.

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### NEWS

—By the will of the late Elizabeth Shaw, Dixon Hospital is bequeathed \$30,000.

—A private sanatorium for the treatment of nervous diseases is being established by Dr. George W. Mitchell in Peoria.

—The Colonial Hospital, Geneva, has been incorporated by Drs. Raymond G. Scott, Francis M. Marstiller and others. The hospital now has accommodations for twenty-five patients.

—At the annual meeting of the State Board of Health held in Springfield, January 5, Dr. George W. Webster, Chicago, was re-elected president and Dr. James A. Egan, Springfield, was re-elected secretary.

—A hospital for the care of destitute crippled children, to cost \$50,000, has been erected three miles west of Wheaton, as a branch of

the Home for Destitute Crippled Children, Chicago. Sixteen acres of land were donated by Sears, Roebuck and Company.

—The case of Dr. Benjamin A. Arnold, Freeport, convicted in the March term of the Circuit Court of Stephenson County, on account of criminal assault, and sentenced to four years in the penitentiary, has been reversed and remanded by the Supreme Court.

—A case instituted by Dr. George T. Palmer against Dr. Addison C. James, Springfield, for alleged violation of the city ordinance which prescribes the reporting of all cases of communicable diseases, was dismissed by the magistrate on motion of the city attorney on the ground that the evidence was not sufficient.

—The Iroquois Memorial Emergency Hospital, a monument to the six hundred and more who lost their lives in the Iroquois fire, December 30, 1903, was dedicated December 30, with impressive ceremonies. The building is of fire proof construction, four stories and basement in height and contains twenty rooms including four surgical dressing rooms and two operating rooms.

—A bill is being prepared by Judge Sherman, President of the State Board of Administration, with the assistance of Dr. Frank Billings, Chairman of the State Board of Charities, providing for the sterilization of habitual criminals, imbeciles, idiots and feeble-minded wards of the state. The bill provides that in all cases the subject must be examined and passed on by an authorized board before this operation is performed.

—The Illinois State Board of Health in its annual report to the Governor, recommends the creation of a state sanatorium for consumptives; a bill providing for better methods of registration in vital statistics to conform with the provisions of the census bureau of the United States; a law providing for a revised medical practice act so as to give the State Board of Health jurisdiction over all licenses issued since 1877; continuation of the provisions of free distribution of diphtheria antitoxin to all classes of people, and a special provision for the investigation of typhoid fever in the state.

—Senator Edmond Beall, former stork mayor of Alton, is drafting a bill which he intends introducing in the Illinois State Senate, providing that in all cases before marriage licenses are issued the applicant must get a surgeon's certificate of good mental and physical condition, and that there is no physical or mental reason why they should not be married. Senator Beall says the purpose of the bill is to prevent the marriage of people who are mentally deficient, or who are suffering from diseases which might be transmitted to posterity. The bill has been endorsed by the Madison County Medical Society. Other societies should consider and act upon it favorably if they think best, and lend their assistance to Senator Beall in this matter.

—The State Board of Health has served notice on David Apfelbaum that if he continues to practice, additional suits will be brought against him. In June last the board revoked his certificate for advertising under another name than his own, and for fraudulent use of the United States mails in conducting medical practice. A short time ago the board



learned that Apfelbaum was still engaged in practice and he was served with notice to discontinue. The notice was disregarded. The board then brought suit against him for practicing medicine without a license. The defendant, through his attorney, declared that he had a license and that there was no provision in the law enabling the board to prosecute a man who had once been issued a license. The attorney took exception to this plea and pressed the suit which was tried in the Municipal Court, January 3. The court decided against Apfelbaum, who has appealed to the Supreme Court.

—A plan to unite all free medical dispensaries of Chicago, to have this organization cooperate with the United Charities and to work in conjunction with the department of health to protect dispensaries and physicians against "dispensary grafters," was announced by the Council of the Chicago medical society in its *Bulletin* of October 29. Every case that comes to a dispensary under the proposed plan will be investigated, it being a matter of statistics that 25 per cent. of the total population of Chicago is receiving free medical service, while only one-half of 1 per cent. is receiving other forms of charity. The project to curb "dispensary grafting" and to ally all dispensaries in one compact organization has been considered by the society's committee on abuse of medical charities for four years. The resolutions state that it is generally believed by the medical profession that many people in times past who were not in indigent circumstances or entitled to public charity have been cared for at public expense in the Cook county hospital and other public institutions of Cook county. These conditions, say the resolutions, tend to pauperize the recipient of such charity and work an injustice on the taxpayer who provides the money for the support and maintenance of the hospital, as well as on the medical profession, the members of which have always given freely and unstintingly of their services in the care and relief of the sufferings of the poor and unfortunate in the community out of all proportion to other classes and to their means for doing it. The medical society urges that the board should rigorously enforce the law governing the admission and treatment of patients in the county hospital and other public institutions of Cook county. They urge as a further safeguard against imposition on the county board in the management of the hospital and on the public who support it, that they should join with the other medical institutions of this city in adapting the system to be established by the Chicago Medical Society in cooperation with the United Charities of Chicago for investigation of the economic worthiness of patients and for improvement of the free medical service to the worthy poor. Addresses in support of the plan were made by Dr. E. A. Fischkin, Dr. Elmer L. Kenyon, Dr. J. V. Fowler, and Dr. C. J. Whalen. Further plans along this line will be considered at the next meeting of the council and at a conference to be held with the department of health authorities and those of the United Charities.

—Since December 1, the following articles have been accepted by the Council for New and Nonofficial Remedies:

Nucleic Acid (Merck) (Merck & Co.).  
Tuberculinum Purum (Morgenstern & Co.).  
Supracapsulin Inhalant (Cudahy Packing Co.).  
Bornyval (Riedel & Co.).  
Antiformin (American Antiformin Co.).  
Acne Bacterin (H. K. Mulford Co.).  
Friedlander Bacterin (H. K. Mulford Co.).  
Antimeningitis Serum (H. K. Mulford Co.).  
Staphylo Albus Bacterin (H. K. Mulford Co.).  
Staphylo Aureus Bacterin (H. K. Mulford Co.).  
Staphylo Bacterin (H. K. Mulford Co.).  
Staphylo Acne Bacterin (H. K. Mulford Co.).  
Normal Serum (H. K. Mulford Co.).  
Noguchi Test for Syphilis (H. K. Mulford Co.).  
Tuberculin T. O. A. Original Tuberculin T. O. A. (V. Koechl & Co.).  
Tuberculin "Koch" (Old) (V. Koechl & Co.).  
New Tuberculin "Koch" (T. R.) (V. Koechl & Co.).  
Koch's Bacilli Emulsion (V. Koechl & Co.).  
Tuberculosis Diagnostic "Hoechst" (V. Koechl & Co.).  
Tuberculosis Diagnostic "Hoechst," dry in tubes (V. Koechl & Co.).  
Tuberculosis Diagnostic "Hoechst," 0.1 per cent. solution (V. Koechl & Co.).  
Vacuum Tuberculin (V. Koechl & Co.).  
Dry Dead Tubercle Germs (V. Koechl & Co.).  
Bovine Tuberculin T. R. (V. Koechl & Co.).  
Bovine Tuberculin (V. Koechl & Co.).  
Bovine Bacilli Emulsion (V. Koechl & Co.).  
Bovine Tuberculin (Old) (V. Koechl & Co.).  
Vacuum Bovine Tuberculin (V. Koechl & Co.).  
Polygenous Tubercle Bacilli Emulsion (V. Koechl & Co.).  
Dead Bovine Tubercle Bacilli (V. Koechl & Co.).  
Tuberculin Residue (V. Koechl & Co.).  
Tuberculosis Serum Vaccine "Hoechst" (V. Koechl & Co.).  
L-Suprarenin Synthetic (V. Koechl & Co.).  
L-Suprarenin Synthetic Bitartrate (V. Koechl & Co.).

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#### REMOVALS

Dr. W. T. Nelson of Bryant has retired from practice.  
Dr. J. L. Cass has removed from Sullivan, to Hinckley, Ill.  
Dr. A. S. Alderson has removed from Yorkville to Thayer, Ill.  
Dr. Henry J. Brugge has removed from Chicago to Lewiston, Mont.  
Dr. O. M. Barnes has removed from Fairbury, Ill., to Santa Anna, California.

Dr. G. J. Martz has removed from Chicago, to Hollandsburg, Dark County, Ohio.

Dr. T. J. Whitten has removed from Peoria, to Nokomis, Illinois, where he practiced formerly for many years.

Dr. Rose A. Russell has removed from the Lutheran Hospital, Granite City, Illinois, to the Cherokee State Hospital, at Cherokee, Iowa.

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## MEDICAL SOCIETY NOTES

At the annual meeting of the Chicago Ophthalmological Society, held at the Automobile Club on January 16, the following officers were elected: President, Dr. H. W. Woodruff, Joliet, Ill.; Vice-President, Dr. E. V. L. Brown; Secretary, Dr. Willis O. Nance; Councilor, Dr. T. A. Woodruff.

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## NEW INCORPORATION

Eldorado Sanitarium Company, Eldorado; capital, \$12,000; conducting a hospital and sanitarium; incorporators, Samuel W. Latham, W. E. Webber, C. E. Webber.

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## PUBLIC HEALTH

The Illinois Commission on Pellagra have made the following report:

Indian maize or corn of the variety that Illinois grows and is feeding to the world is in no manner responsible for pellagra, that mysterious disease which has been perplexing medical men of many countries for years, according to the first report of the Illinois pellagra commission, which is ready for presentation to the legislature. The commission asks the legislature to appropriate \$15,000 with which to prosecute its researches in the next two years. Illinois is the first state in the union to recognize the disease officially and to make official investigation of its origin.

Soon after pellagra was found to be so prevalent at the Peoria state hospital for the insane, where many deaths have been recorded, Gov. Deneen named the following medical men of Illinois as a pellagra commission and empowered them to make a thorough inquiry:

Dr. Frank Billings of Chicago, president; Dr. J. L. Greene, alienist of the state board of administration; Dr. H. Douglas Singer, director of the state psychopathic institute; Dr. H. S. Grindley, Dr. George W. Webster, president state board of health; Dr. Howard T. Ricketts, Dr. W. J. McNeal and Dr. Oliver S. Ormsby.

There are official estimates from the boards of health of thirty-seven states in which they acknowledge the presence of at least 7,000 well defined cases. North Carolina reports 2,000, Georgia 2,000, Mississippi 300, Virginia 400. The mortality is estimated at 50 per cent.

Dr. George A. Zeller, superintendent of the hospital for the insane at Peoria, sees a dark future. "With no certainty that we may not have to deal with pellagra as a national health problem," he says, "I have seen nothing in my study of the disease here or abroad that is reassuring and I can only offer congratulations that Illinois is the first to give official recognition to it, with a view of determining its cause and the means of prevention."



—For the past two years the Bureau of Food Inspection has been endeavoring to educate the milk dealers of the city and their supplying dairymen as to their responsibilities under the pasteurizing and tuberculin testing ordinance. Gradual enforcement of the requirements as modified by consideration for the circumstances of the business interests involved, concern for the public safety, and allowance for the natural and, under the circumstances, necessarily slow adaptation necessitated by the multiplicity of interests affected by the terms of an ordinance of such far reaching influence, has and is being accomplished. The results have been such that the Bureau now believes the moment is at hand when every influence should be applied to force compliance with the essentials of the ordinance: i. e., every cow producing milk for the Chicago market must be properly tuberculin tested each year, or every drop of such cow's milk must be efficiently pasteurized. On Jan. 1, 1911, the Milk Inspection Division purposes to apply all of its energies to the accomplishment of this end, by the exercise of every power authorized by the law for the enforcement of the terms of the ordinance.

1st. On and after Jan. 1, 1911, the beginning of a new license period for milk dealers, no license will be issued to any dealer unless his supply is properly pasteurized or obtained from a dairy the cows of which have been properly tuberculin tested within one year.

2d. On and after Jan. 1, 1911, the beginning of a new license period for milk stores, no license will be issued for any store selling milk unless such milk has been properly pasteurized or obtained from a dairy the cows of which have been properly tuberculin tested within one year.

3d. If necessary, police assistance will be requested to prevent the carrying on of a milk business at any place where license is refused.

4th. Every effort will be made to exclude from the market the milk from all dairies having cows not properly tuberculin tested within one year and not pasteurized or consigned to a pasteurizing dealer. Especially will such attention be accorded those few dairymen who have not kept faith with or "welched" out of their written agreements as made with the Department for the testing of their cows.

5th. In every case of violation, in addition to withholding or revoking the license, suit for the collection of the penalties provided will be instituted.

To many the outline of action as given above may seem rather drastic and unnecessarily severe, yet any fair-minded person fully acquainted with the dangers to which the health of the Chicago public is daily exposed through non-compliance with this law, the many deaths resulting and almost directly and positively traceable to such negligence, verging on that of a criminal character, will be inclined to criticize us for the past seemingly necessary leniency.

Suggestions are offered as follows:

1. Milk dealers selling but few cans and not pasteurizing should at once investigate their dairymen's official tuberculin testing record and engage for milk only from such dairymen having properly tested herds.

2. Milk dealers with a sufficiently large trade, and not yet so provided, should at once arrange to equip themselves with a pasteurizer.

3. The cooperative method of pasteurizing is recommended. Frequently the dairymen associated with such dealers will be found willing to contribute and assist in promoting such plans, in that they are thus relieved of the yearly expense of tuberculin testing and the dreaded loss from the reacting cows found.

4. All milk stores should investigate as to the tuberculin testing or pasteurizing status of the milk they are selling, and contract only with such dealers as are complying with the terms of the tuberculin testing and pasteurizing ordinance. Ask the Food Bureau.

5. The hiring of pasteurizing services may be found helpful for some dealers and profitable to such as have a surplus of pasteurizing capacity or time.

6. Dairymen not tuberculin testing should promptly seek dealers provided with pasteurizers.

7. The dairyman does not evade the provisions of the law by delivering to creameries which themselves depend on the Chicago market for the sale of their products, in that such products made from the milk of non-tuberculin tested cows, unless such milk be pasteurized, are also prohibited sale in our market.—From *Bulletin Chicago Department of Health*.

—THE CHICAGO-WINFIELD SANATORIUM opened its doors for admission of patients on Feb. 11, 1909. The institution was brought into existence through the efforts of several public spirited Chicago women whose names appear on the present board of directors.

*Location.*—The sanatorium is located at Winfield, Du Page County, Illinois, within one hour's ride from Chicago, on the Chicago Northwestern Railway. The site is a farm of 45 acres. Undulating land, numerous groves of trees, pure air, excellent drainage and pure water, make this spot, thirty miles from Chicago, an ideal place for a tuberculosis sanatorium. The outlook is very pleasing, over miles of rich country land.

*Buildings.*—The institution includes (1) a spacious two-story administration building, with all the necessary facilities and private rooms connected with open air sleeping porches, (2) two open air shacks for men, (3) one large shack for women, (4) one shack for children, (5) one day shack for adults and a similar shack for children. At the entrance of the sanatorium is the Baron Hirsch Women's Club Rest Cottage, at present used by the employees.

*Management.*—The Chicago-Winfield Sanatorium is conducted at present under the auspices of the Associated Jewish Charities of Chicago. The institution is non-sectarian as to admission of patients. The present group of patients includes men, women and children of various nationalities. The Board of Directors of the Chicago-Winfield Sanatorium consists of the following: Mr. Charles A. Stonehill, President; Mrs. M. L. Rothschild, Vice-President; Mrs. Emma B. Mandl, Vice-

President; Mrs. B. M. Englehard, Recording-Secretary; Mr. Max Lindauer, Financial Secretary; Mr. David M. Pfaelzer, Treasurer; Mrs. Joseph Fish, Mrs. Johanna M. Loeb, Mrs. A. I. Radzinski, Mrs. J. H. Quasser, Mrs. J. Springer, Mrs. Morris Tower, Mr. Herbert J. Friedmar, Mr. Jacob R. Wineman, Mr. Ferdinand Silberman, Mr. Charles Reitley, Dr. Theodore B. Sachs.

*Class of Patients Admitted.*—Curable cases of pulmonary tuberculosis, chiefly in the incipient stages. Pay and charity patients. Chairman of the Admission Committee, Mrs. Johanna M. Loeb, 4715 Greenwood Avenue.

*Method of Treatment.*—Modern hygienic-dietetic methods. Outdoor life—entire twenty-four hours. Absolute rest on admission, until constitutional disturbance subsides and the patient's nutrition is re-established by liberal diet. With convalescence comes the gradual introduction of exercise into the régime of each individual case; and later—various kinds of work to harden the muscles and gradually restore the working power.

*Object of the Institution.*—To arrest the tuberculous process and to restore the working power.

The patients come from various manufacturing and commercial establishments of Chicago.

#### RESULTS ACCOMPLISHED DURING THE FIRST TWO YEARS OF OPERATION OF THE CHICAGO-WINFIELD SANATORIUM.

*Total Number of Admissions in the Last 23 Months.*—Since February 11, 1909, the day of opening of the institution, a total of 224 patients were admitted. Of these 46 were children. Of the total 224 patients, 164 were discharged up to January 1, 1911, and 60 were at the institution on that date. Capacity of the institution at present, 68 beds; this number to be gradually increased.

*Condition of the 164 Discharged Patients at the Time of Their Discharge.*—Of the 164 discharged patients, 101 were in the incipient stage on their admission, 42 in the moderately advanced stage, and 1 far advanced. The condition of these 164 patients at the time of their discharge was as follows:

*Incipient.*—Apparently cured 38, arrested 45, or 82 per cent. of the total; improved 18, or 18 per cent. of the total. Total 101.

*Moderately advanced.*—Arrested 21, apparently cured 1, or 52 per cent. of the total; improved 16, unimproved 4. Total 42.

*Far advanced,* 1; *Improved:* unclassified, 20 (stay less than one month).

Thus 82 per cent. of all incipient cases were found either "apparently cured" or "arrested" at the time of their discharge; in the moderately advanced cases arrest of the tuberculous process took place in 52 per cent.

*The Present Working Capacity of the 164 Discharged Patients.*—The 164 discharged patients were under observation for periods ranging from a few months to one year and eight months since their discharge from the institution. Their present working capacity is shown in the following tables:



*Discharged incipient cases, 101.*—Full working capacity at present 75, partial working capacity 20, or 94 per cent. of the total; loss of working capacity 6. Total 101.

*Discharged moderately advanced cases, 42.*—Full working capacity at present 16, partial working capacity 13, or 69 per cent. of the total; loss of working capacity 13. Total 42.

*Present working capacity of the 164 discharged cases, regardless of the stage of disease on admission.*—Full working capacity 91, partial working capacity 33, or 86 per cent. of the total; loss of working capacity 20. Total 144. Unclassified 20. Total 164.

These results compare favorably with those of other well established sanatoria and strengthen the belief that tuberculosis can be successfully treated in our home climate if treated in the proper way and at a proper time.

The analysis of the work done at the Chicago-Winfield Sanatorium shows that the best chance lies with the discovery of the disease in the incipient stage and the immediate institution of treatment. A chance, however, should be given to those who are in the moderately advanced stage and this will continue to be the policy of all sanatoria until such a time that the laity will be willing to send a patient to a sanatorium even if the appearance does not support the diagnosis of tuberculosis.

The Chicago-Winfield Sanatorium made great strides in its development in a comparatively short period of time. From the initial capacity of 20 beds, it has now accommodations for 68 patients, and this is to be soon increased.

The institution has taken 224 young men and women suffering from a disease that is fatal without proper treatment, and returned 86 per cent. of them, as wage-earners to the community. Thus a large number of families, dependent upon these patients, remain self-supporting, and besides that, have learned the proper methods of preventing the disease.

—EDWARD SANATORIUM, NAPERVILLE, ILL.—The institution opened on January 15, 1907. In operation four years. Farm bought, original buildings erected and equipments installed at the expense of Mrs. Keith Spaulding of Chicago. Institution managed and developed, from the day of its opening, under the direction of Dr. Theodore B. Sachs of Chicago. Management independent during the first six months. Sanatorium transferred by Mrs. Spaulding to the Chicago Tuberculosis Institute in 1907.

*Support.*—Contributors from Chicago (chief of them, Mrs. Spaulding). Pay patients charged only the cost of maintenance; at present \$10.00 a week. Ten free beds supported by Mrs. Spaulding during the last four years. One bed for children supported by the Elizabeth McCormick Memorial Fund. Three beds, Sears, Roebuck & Company for their employees. One bed by the Woman's Trade Union League for their members. One bed by the Nurses' Auxiliary of the Chicago Tuberculosis Institute for the nurses afflicted with the disease. In numerous cases the charges to the patients are reduced through allowances given out of the Patients' Relief Fund, contributions by various fraternal organizations, United Charities, etc.

*Methods of Treatment.*—The disease is treated by the application of the modern hygienic-dietetic methods. Patients pass the entire twenty-four hours out of doors, sleep in open air shacks and pass the day hours in specially constructed recreation shacks. On admission each case is studied thoroughly with the aid of all the medical and laboratory methods. *Absolute rest* continues until the constitutional disturbance subsides and the patient's nutrition improves up to normal. Then exercise is gradually introduced into the daily régime and later graduated work becomes a feature of the treatment, this to harden the muscles and prepare the convalescent patient for the work awaiting him in the future. The work assigned the patient is individualized: thus an office worker is given the opportunity to do his work under open air conditions; the nurse is assigned tasks suitable to her; and so on. No matter what the occupation is assigned to the patient, most of the day's time is spent out doors. The object of the Institution is, *first*, to arrest the tuberculous process; *second*, to restore the working power.

*Present Equipment and Capacity.*—Farm 40 acres. Four open air shacks for patients. One open air shack for nurses employed at the institution, five Tucker tents for patients, one Tucker tent for former patients at present employed at the institution. Infirmary, in connection with the medical building, for twelve patients. Medical building, including all the medical and laboratory facilities—a feature of the institution. Service hall, assembly room, kitchen, laundry; second floor given to employes. Two recreation shacks for day use. Total capacity at present 60 beds, to be increased to 100. Farm provides necessary vegetables and is gradually being developed to provide all the necessary eggs (provides now one-third of the amount needed). Modern poultry house built after the plans of the U. S. Department of Agriculture. Five hundred and fifty fowls.

*Sanatorium Régime.*—The Edward Sanatorium was organized, is at present conducted, and stands for revolutionizing the present institutional methods of treatment of tuberculosis in this city. A constant effort is being made to develop the medical and laboratory facilities of the institution so that each case can be studied thoroughly in order that proper treatment can be instituted in each individual case. The régime is strict but is put into effect in such a way as to make the patients co-operate in all that pertains to the institution. The life of the convalescent patient is made full by rest, exercise, work, social activities (concerts, lectures, patients' reading circle are permanent features of the institution). The aim is to blend the patients, the nurses, the doctor, the employes, all into one happy family, with one purpose in view, to accomplish the restoration of the tuberculous patient to health and ability to earn his livelihood.

*Class of Patients.*—Workers in offices, commercial and manufacturing establishments in Chicago, mothers reduced in their conditions by drudgery of household work under unfavorable conditions, young girls and

young men with vitality drained by the same kind of conditions, or a mode of life that must be corrected. Good moral character is essential to admission to the institution. The hard working, honorable wage-earners are our patients. The sanatorium is a school and exposition of normal life.

*Results Obtained at the Edward Sanatorium.*—Up to January 1, 1911, over 400 patients passed through the Edward Sanatorium. Average duration of stay was about four months. Two hundred and seventy-seven cases are analyzed in the book just published. Of 176 patients in the incipient stages of the disease formerly treated at the Edward Sanatorium, 161 are at present in normal health and in possession of full working capacity. This is at the end of six months to three years and nine months since their discharge from the institution. You can find these young men and women working in the various offices, commercial and manufacturing establishments in the city of Chicago, contributing to the support of their families. They are men and women who have learned the proper mode of life, have gained enthusiasm and energy and are missionaries of proper living in their families, among their friends and associates.

Thus 9.15 per cent. of all incipient cases formerly treated at the institution are found now in good condition. This is a record that compares favorably with the showing made by any sanatoria in any part of the country. Of the 91 moderately advanced cases treated at the sanatorium during the last three and one-half years, 32, or 35.1 per cent., are at present in the possession of full working capacity. We must add to this also 5.1 per cent. of the incipient cases at present in possession of partial working capacity, and 16.5 per cent. of the moderately advanced cases with partial working capacity. It is understood that with the progress of time a certain percentage of arrested and cured cases relapse, but strict supervision is kept over these discharged cases to make the percentage of the relapses as small as possible. A complete analysis of the entire 400 cases will be published later.

*The effect of the work of the Edward Sanatorium on the tuberculous situation in the City of Chicago. The mission of the Edward Sanatorium.*—The work of the Edward Sanatorium led to the establishment of other similar institutions (as for instance, the Chicago-Winfield Sanatorium, an excellent institution, brought into existence through a ten year's campaign by Dr. Sachs. The sanatorium was organized by the Baron Hirsch Women's Club, the Jewish Consumptives' Relief Society, and the Willing Workers. It is conducted at present under the auspices of the Associated Jewish Charities of Chicago.)

The results obtained at the Edward Sanatorium during the first three years of its operation have attracted the attention of the Chicago community to such an extent as to pave the way for the Chicago Municipal Sanatorium with its comprehensive provision for the thousands of tuberculous patients in this city. This city needs additional institutions, but even when the Municipal Sanatorium comes into existence and



the number of private sanatoria grows, the aspiration of the Edward Sanatorium is still to continue its development along the lines of efficiency, to serve as an example to other institutions. This is certainly a very worthy cause and the Chicago public ought to be very liberal in the support of this institution in order to enable it to maintain its pace.

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### MARRIAGES

George Washington Mitchel, M.D., Peoria, Ill., to Miss Myrtle McKee of South Dakota, January 3, 1911.

James Alfred Sullivan, M.D., East St. Louis, Ill., to Miss Ethelynnne P. Weisert of Vincennes, Ind., May 25.

Theodore H. Trapp, M.D., Hecker, Ill., to Miss Lela Mannen of Waltonville, Ill., at Mount Vernon, Ill., December 29.

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### DEATHS

LLOYD E. GOODPASTURE, M.D., Washington University, St. Louis, 1908; died at his home in Thayer, Ill., December 25, 1910, from typhoid fever, aged 28.

ADOLPH BUETTNER, M.D., College of Physicians and Surgeons, Chicago, 1886; died at his home in Chicago, December 18, 1910, from paresis, aged 55.

M. V. LONERGAN, M.D., Decatur, Ill.; a graduate of the College of Physicians and Surgeons, Keokuk, Iowa; was burned to death in the hotel fire at Pana, Illinois, December 27, 1910.

ALBERT E. AURINGER, M.D., Hahnemann Medical College, Chicago, 1888; of Mendota, Ill., died December 4, 1910, while making a professional call, from cerebral hemorrhage, aged 53.

JOHN S. WATSON, M.D., Bennett Medical College, Chicago, 1875; for many years a practitioner of Minooka, Ill., died at his drug store in that place, December 9, 1910, from myocarditis, aged 65.

GEORGE HARVEY DOANE, M.D., College of Physicians and Surgeons, Chicago, 1908; a member of the American Medical Association; died at his home in O'Fallon, Ill., January 6, 1911, from pneumonia, aged 21.

JOHN L. HALE, M.D. (license, thirty years of practice, Kentucky, 1896), of Wyckliffe, Ky.; formerly a member of the American Medical Association; died in Cairo, Ill., December 30, 1910, from cancer, aged 75.

RAYMOND W. CHAMBERLAIN, M.D., Washington University, St. Louis, 1909; of Fisher, Ill.; senior medical interne at the City Hospital, St. Louis; died in that institution, December 24, 1910, from typhoid fever, aged 27.

JOHN ALOYSIUS HEMSTEGGER, M.D., Chicago Homeopathic Medical College, 1890; formerly professor in materia medica in his alma mater; died suddenly at his home in Chicago, January 5, 1911, from cerebral hemorrhage, aged 56.

MONTRAVILLE WADDLE, M.D. (license years of practice, Illinois, 1878): for 45 years a practitioner; hospital steward during the Civil War; died at his home in Carmi, Illinois, December 22, 1910, from rheumatism, aged 77.

WILLIAM POWELL GORDON, M.D., Washington University, St. Louis, 1867; Missouri Medical College, St. Louis, 1875; a member of the American Medical Association; died at his home in Carlyle, Ill., October 10, 1910, from cirrhosis of the liver, aged 66.

L. L. SILVERTHORN, M.D., a pioneer physician of Charleston, Coles County, died January 21, 1911, of pneumonia, at the age of 81 years. Dr. Silverthorn was a splendid type of the old-time family physician, and had made his mark in the annals of Coles County.

O. K. GRIFFITH of Huntley, Ill., died September 24, 1910. He was born in Mesopotamia, Ohio, July 29, 1836, and graduated from the Cincinnati Eclectic Medical Institute. Dr. Griffith has been in practice for forty-two years. He was a member of the McHenry County Medical Society.

PATRICK HENRY MCRAVEN, M.D., Missouri Medical College, St. Louis, 1878; formerly of McClure, Ill., but for a few months a resident of East St. Louis; at one time member of the staff of the Anna State Hospital; died at his home in East St. Louis, November 21, 1910, from pneumonia, aged 58.

EDWARD PAGE GRANVILLE HOLDERNESS, M.D., Missouri Medical College of St. Louis, 1860; Bellevue Hospital Medical College, 1875; consulting surgeon to St. Joseph's Hospital, Bloomington, Ill., of Chenoa, Ill.; died in Chicago Heights, Ill., January 1, 1911, from bronchopneumonia, aged 78.

JULIEN E. HEQUEMBOURG, M.D., Rush Medical College, 1882; of Chicago; a member of the American Medical Association, and Physicians' Club of Chicago; attending physician to St. Joseph's Hospital, and the Daily News Sanitarium for Babies; died suddenly while making his rounds in St. Joseph's Hospital, Chicago, December 8, 1910, from heart disease, aged 54.

JOHN ABBOTT PRINCE, M.D., of Springfield, brother of Dr. A. E. Prince and son of the late Dr. David Prince of Jacksonville; died suddenly at Springfield, January 1, 1911. Dr. Prince had practiced in Springfield and Jacksonville for 24 years, and was a graduate of the University of Michigan. He was well known as a surgeon through the central part of Illinois.

ISAAC PRINCE, M.D., Hahnemann Medical College, Chicago, 1878; for ten years a missionary in Jamaica; chaplain during the Civil War; for several years assistant superintendent of the Foundlings Home, Chicago; founder of the Home for Destitute Crippled Children, and instrumental in establishing the first three day nurseries in Chicago; died in the Church Home for Aged People, Chicago, January 2, 1911, from pneumonia, aged 76.

## Book Notices.

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**HYGIENE OF PREGNANCY.** By E. S. Harris, M.D., Higginsville, Mo. Price 10 cents per copy.

Dr. Harris has assembled in a pamphlet of twenty-four pages, a great deal of valuable advice, and as four editions have been printed in a short time, there is proof that the book fills a long felt want. The doctor's name is placed on the first page of the cover, and this serves as an ethical form of advertising his services to the public. Send to him for a sample copy.

**THE PRINCIPLES OF PUBLIC HEALTH.** By Thomas D. Tuttle, M.D., health officer of Montana. Price 50 cts. World Book Co. Yonkers-on-Hudson, N. Y.

Dr. Tuttle seems to be a man actually interested in the health of the people, and not a politician giving most of his time to dirty party politics. He has in this book of 180 pages produced a clear and simple statement of modern ideas on the principles of public health, as applied to the individual and community. Such books as this are destined to have considerable influence in promoting sane thoughts on this most important subject, and we trust will be adopted by all schools in Illinois as a text book.

**A MANUAL OF NURSING.** By Margaret Frances Donahoe, formerly superintendent of nurses, and principal of training school Philadelphia General Hospital. D. Appleton and Co., New York and London. Price \$2.00.

Miss Donahoe's work of nearly 500 pages is a text book of great value, because it deals with basic principles, and is calculated to stimulate the nurse to a thorough study of her profession. It can be safely placed in the hands of an intelligent person, and contains just enough but not too much of real science for the trained nurse. No doubt Miss Donahoe's long connection with the Philadelphia General Hospital and the Massachusetts General Hospital has enabled her to prepare this manual. We heartily commend it to our readers.

**PRIMER OF HYGIENE.** By John W. Richie and J. S. Caldwell, illustrated. Cloth. Price 40 cts. World Book Co. Yonkers-on-Hudson, N. Y.

The authors of this excellent text-book for schools are Professors of Biology in two prominent Southern Colleges, and these gentlemen have undoubtedly produced a book which is destined to exert a considerable influence on the health and morals of the rising generation. The language is simple and direct, and the lessons are exemplified by wood cuts of great excellence. The effects of alcohol and tobacco on the health are stated in a temperate way and should certainly appeal to all classes much more than the extravagant and untruthful statements made in many books which have been foisted on the young scholars. The work deserves to be read by every practicing physician who might well recommend it as a bit of interesting reading for grown-ups as well as children.

**SYMPTOMATIC AND REGIONAL THERAPEUTICS.** By George Howard Hoxie, A.M., M.D., Professor of Internal Medicine and Dean of the Clinical Department in the School of Medicine of the University of Kansas; Member of the American Academy of Medicine, American Medical Association, etc.; President, 1909-1910, of Association of American Medical Colleges. With fifty-eight illustrations in text. Cloth. Price, \$4.00. New York and London, 1910: D. Appleton & Company.

Dr. Hoxie of Kansas City, Kansas, has stepped into the lime-light with a work of distinct value, and which certainly should be recommended to the student and the young practitioner in the difficult work of adapting knowledge given in the medical school to the actual test of treating diseases. This book is a little different from any yet submitted and deserves a large sale. We notice that Dr. Hoxie gives a place to the Denver mud poultice, which we believe has had its day and been proven almost, if not quite, useless. Otherwise the book is certainly quite up to date and worthy of recommendation.



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## ORIGINAL ARTICLES

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### HEREDO-SYPHILITICS AND THEIR DETECTION \*

AMAND RAYOLD, M.D.

ST. LOUIS, MO.

Before taking up the question of hereditary syphilis, it will be necessary to review briefly acquired syphilis.

Syphilis is an infectious disease, chronic in course, protean in character, acquired by contact, or transmitted by inheritance. Osler in a remarkably clear and comprehensive statement, sums up the whole question of syphilis:

Syphilis, which begins its pathologic existence as a modest, inactive Hunterian chancre, soon enters upon a career that is unsurpassed for inclusiveness and variety of its manifestations. There is no organ of the body, nor any tissue of the organs, which syphilis does not invade, and it is manifestly difficult to speak, at least at all concisely, of the pathology of the disease, just as it is almost impossible to describe its clinical symptoms without mentioning almost every symptom of every disease known.

"Syphilis never kills" is an old saying, borne out by the mortality records of all cities, for it is rare indeed that the disease is recorded as the cause of death in health department certificates, or ever freely acknowledged by its victims. This would lead to the belief that it is a rare disease. Nothing could be farther from the truth, for not only is it the most widely disseminated of all the acute infectious diseases among all classes and conditions of peoples, but is the most formidable, the most terrible and the most deadly. Statistics on the frequency of the disease among the population are impossible to obtain. The most reliable with which I am acquainted are those of Erb. He found in 10,000 cases of all varieties of disease in his practice, excluding locomotor ataxia of the better class of men, 21.57 per cent, had syphilis. He believes that 12 per cent. of the population of Berlin has syphilis. Blaschke asserts that every unmarried man in Berlin below 30 will have gonorrhea twice, and every fourth or fifth, syphilis. Neisser of Breslau

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\* Read before the Chicago Medical Society (by request) Jan. 4, 1911.

asserts that 75 per cent. of the adult male population have gonorrhea and 15 per cent. syphilis. Dr. Prince Morrow estimates the number of syphilitics in the United states as over 2,000,000.

The cause of syphilis, the *Spirochæta pallida*, was discovered by Schaudinn in 1905. It is a long, delicate, spiral, non-refractive, motile organism belonging to the group protozoa. It multiplies by division through its length and with the ultra microscope small dark bodies can be seen within the organism which are thought by some observers to be the spores, or at least a resting stage of the spirillum. That these dark bodies are a resting, intermediate or intracellular stage of the spirochete has not been proved, yet there is much strong evidence in support of it. It grows and multiplies rapidly in the tissues of its victims, but so far has not been grown successfully on artificial media outside of the body. It therefore answers only one of Koch's postulates, but nevertheless is accepted by syphilographers and laboratoarians the world over, with a "probability resting on a certainty" as the causal agent of syphilis.

In the beginning the *Spirochæta pallida* undoubtedly lead a saprophytic existence on the surface of the skin or mucous membranes, but later acquired pathogenic powers enabling it to penetrate the living tissues and produce widespread pathologic wreckage. Hence it always displays an affectionate predilection for the skin or surfaces covered with squamous epithelium. It very probably cannot penetrate the intact epithelium but it is certain that it does find entrance through minute cracks in the surface of the skin or mucous membranes. At the point of entrance, a slight reddening of the skin appears which spreads and a papule forms; later the top of the papule ulcerates. This is the chancre or primary stage of syphilis. From the chancre the spirochete forces its way into the lymphatic vessels and travels quickly to the nearest glands. In persons killed during the primary stage of the disease with the chancre on the genitalia, not only the inguinal glands, but the iliac and aortic lymphatic glands have been found involved. Up the lymphatic ducts the spirochetes slowly travel until the veins in the upper thorax are reached, whence they are discharged in ever increasing numbers. Once in the blood stream they are quickly carried to every tissue of the body. Although the spirochete now has every tissue of the body at its mercy, it nevertheless displays its affection for the skin by growing in and producing on it the characteristic eruptions of the disease. This is the secondary stage of the disease and appears in from forty to sixty days after the advent of the chancre. The primary and secondary are the highly contagious stages of the disease. The tertiary stage was heretofore considered non-contagious, but within the last few years it has been shown that gummata contain active spirochetes and successful inoculations have been made with them, proving their contagiousness. The tertiary stage is one of infective granulomata, and the lesions appear, as a rule, from the first year onward, although in rare cases the tertiary may impinge on the secondary symptoms. Usually there is a period of apparently perfect health between the secondary and tertiary phenomena. Fournier's figures of 4,400 cases of tertiary syphilis showed 188 cases during the first year after infection.

453 during the second, 471 during the third, and 388 during the fourth, the number falling rapidly during each succeeding year, but the possibility of tertiary lesions occurring remains for fifty years or longer.

*Gummata.*—When a spirochete finds entrance into the body and comes in contact with a cell, it sets up an irritation in that cell. The resulting irritation incites mitosis and the cell divides. Every cell in contact with the spirochete is thus stimulated to division, and it is soon surrounded by a wall of dividing cells. At the same time the defensive cells of the body, the lymphocytes, are attracted chemotactically to the fray and crowd in and around the spirochete in an effort to help build up a retaining wall about the organism. In spite of all this activity on the part of the tissues to corral the spirochete, it is apparently not in the least disconcerted, but goes on about its lifework of growing and reproducing its kind.

The result of this growth and multiplication is the production of toxins which poison the surrounding tissue cells and they undergo fatty degeneration, later necrosis and finally cheesy degeneration. The toxins, however, attract increasing numbers of lymphocytes and the walls about the spirochetes increase in thickness; finally a thick fibrotic membrane forms all around the mass. The battle between the spirochete and the tissues results in the production of various sized tumors, some as small as a pin head and others as large as an orange; this is the granulation tumor or gummata of the disease. Gummata may develop in any organ of the body and always do so at the expense of that organ. The gravity of the gummata, therefore, depends on the organ involved.

*Arteries.*—It is said that "Venus loves the arteries," for the arterial system is early involved in syphilis and next to the skin receives the brunt of the attack. In fact, the effects on the arteries are so conspicuous, so extensive, so dramatically grave, that some observers look on syphilis as exclusively a cardiovascular disease. In syphilis the veins are rarely involved, but the arteries suffer from the very beginning. Here a brief description of an artery and the way in which syphilis affects it is necessary to a comprehension of the pathology of the disease. Arteries may be divided into two great classes, a muscular type and an elastic type. An artery is a flexible tube made up of three layers of tissue: an inner layer, a middle layer and an outer layer known as intima, media and adventitia. The inner layer is composed of endothelial cells lying on a connective tissue base. The middle layer is composed of muscular tissue, of yellow elastic tissue, or both; and the outer layer of connective tissue, lymphatics, blood vessels and nerves. The nerve supply is received from the sympathetic system and consists of vasodilator and vasoconstrictor nerves. By means of these nerves, the artery may be dilated or constricted automatically at the need of the body.

The artery does not receive its nourishment from the blood flowing in it, but from small arteries which enter the outer layer and are distributed to it and the middle layer.

Early in the disease the spirochetes are carried by the blood supply into the middle and outer coats of the artery. Here their presence and



their toxins set up an irritation which excites division of the fixed tissue cells, and causes the invasion of the tissues by lymphocytes and plasma cells, resulting in a marked thickening of the middle and outer coats. The marked thickening of the middle coat necessarily narrows the caliber of the tube; this narrowing may go on to complete obstruction, with proliferation and exfoliation of the inner layer: true endarteritis obliterans. Further the thick and clumsy artery does not respond readily to the vasodilator and vasoconstrictor nerves. The gravity of this is easily comprehended when the arteries of the brain or the heart are diseased, and the tissues to which they are distributed fail to receive proper nourishment. When the arteries of the brain are involved a train of nervous phenomena is marshalled forth, from psychic disturbances and mild paralysis up to widespread areas of softening and certain death. When the coronary arteries are involved, the results are immediate and very disastrous, as will be shown later. The round cells which accumulate in the middle and outer coats of an artery, rarely undergo necrotic changes, but pass on to fibrosis, resulting in a hardening and thickening of the vessels so that the boundary between these two layers is lost. This fibrotically thickened arterial wall never possesses the resiliency and strength of the normal artery. For this reason syphilitic disease of the arteries is the most prominent cause of aneurism, especially of the aorta. There is nothing in what has been described here which absolutely distinguishes syphilitic arteritis from arteriosclerosis, but attention is called to the fact that syphilis is a very important cause of arterial disease.

*Parasyphilitic Affections.*—While in a great majority of cases the *Spirochata pallida* exhibit a decided affinity for surfaces covered with squamous epithelium, nevertheless it would seem that there are some strains of the spirillum which show an elective affinity for nervous tissues. The invasion of the body by them is followed by the mildest type of secondary eruptions, or with an eruption so fleeting as to vanish unobserved. These are the so-called mild types of syphilis, but which later develop grave lesions of the nervous system, the most prominent of which are locomotor ataxia and general paralysis of the insane.

Erb, in 1,100 cases of locomotor ataxia which came under his personal observation, found that 90 per cent. had a history of syphilis, and in only 3 per cent. could syphilis be excluded, and similar evidence in regard to general paralysis could be quoted. These affections of the nervous system appear as a rule long after all evidence of syphilis has disappeared, and hence it is manifest that syphilis has a tendency to produce certain changes of a degenerative nature in the nervous system of its victims long after all evidence of the disease has vanished.

*Syphilization.*—The malignancy of the *Spirochata pallida* depends on the virulence of the organism and the resistance of the individual affected.

$$M = \frac{V}{R}$$

The capacity of resistance may be racial or individual. In a country where syphilis has been endemic for centuries, what may be called a racial immunity becomes manifest. Not only does the disease affect a certain percentage of the

population, but being eminently inheritable, it affects in a lesser degree a large percentage of those who have not directly suffered from the primary disease, and thus there come about what has been called "syphilization" of the community in the sense that almost every one has some ancestral taint, recent or remote, and what is more important, a certain degree of immunity.—(F. W. Andrewes.)

The assertion of racial immunity by syphilization is supported by a mass of convincing evidence, and finds especially strong confirmation in the effect of the disease on a race virgin to it. The history of syphilis affords many such occurrences from the first infection of the sailors of Columbus by the American aborigines, down to recent reports from Uganda.<sup>1</sup>

*Inheritance.*—Syphilis may be acquired directly, acquired congenitally, or inherited. In a great majority of cases, fully 90 per cent., syphilis is acquired in sexual congress. The remaining 10 per cent. is accidental or otherwise. There is a marked distinction between inherited and congenital syphilis. Inherited syphilis is due to syphilitic influences affecting the ovum or spermatozoon before or at the moment of fertilization, while congenital syphilis is syphilis acquired within the mother's womb or at the time of birth, before complete separation from the mother.

Inheritance is to receive from one's progenitors one's mental and physical constitution. The individual begins to be the moment fecundation is accomplished, the moment the nuclear material of the spermatozoon fuses with the nuclear material of the ovum, and the two become one. It is at the moment of fusion that the new individual begins its inheritance. Any influence acting upon and modifying it after that moment is something acquired by what is already a separate entity. It is not inherited, but congenital.

That alone therefore, is inherited which is the property of the individual at the moment of its becoming an individual, which is part and parcel of the material germ plasma from which he originates, or is provided by the interaction of the same. What is the property of the individual from the moment of beginning existence need not show itself for many years, such as premature baldness, inheritance of gouty or diabetic tendency after 35. (Adami.)

In the inheritance of morbid conditions of syphilis, the same rule applies. If the father have syphilis, but not in an active state, so-called cured syphilis, his children will exhibit stigmata of syphilis. If the mother have syphilis, not in an active stage, her children will exhibit stigmata of syphilis, but more markedly than when the father alone is infected. When both parents have syphilis, in a non-active condition, their children will exhibit syphilitic stigmata much more markedly than when either parent alone has it. Children of such syphilitically infected parents, while exhibiting no active signs of the disease, do exhibit certain stigmata, such as fetal cachexia, malnutrition, senile expression, malformations, arrested development of the bony skeleton and teeth. These characteristics are presumably due to action of the toxins of the *Spirachæta pallida* on the germ cells of the parents.

In confirmation of these statements, we have a number of experimental observations, the most striking of which are those of Lusty and Carriere, quoted by Adami.<sup>2</sup>

1. Lambkin, F. J., Colonel R. A. M. C.: "An Outbreak of Syphilis in a Virgin Soil; Notes on Syphilis in the Uganda Protectorate."

2. Principles of Pathology, Vol. I.

Man himself is difficult to deal with, but it is when we come to direct observation upon animals that we gain the surest effect of parental intoxication. Here some of the most instructive figures are those of Carriere on guinea pigs. He inoculated his guinea pigs over a period of several months with various soluble products of the tubercle bacillus, making altogether thirty separate matings in the course of two years. His results may be summed up in the following tables:

	Stillborn.		Dying 16th Day.		Surviving.		Total Born
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	
Male and female both inoculated .....	13	52.0	7	28.0	5	20.0	25
Female inoculated....	7	26.9	9	34.0	10	38.4	26
Male alone inoculated	5	16.6	3	10.0	22	73.0	30

Influence of intoxication greatest when both parents were subjected to inoculation, least when male alone was treated. But here, although there were ten matings, the average litter was only three, whereas the average litter of healthy guinea pigs is between four and five, and of those born 16.6 per cent. were born dead; and of twenty-two that survived beyond the sixteenth day seven are described as weaklings. There can be no doubt that a bacterial poison such as the products of the tubercle bacillus has a distinct action on the paternal germ plasm, as indeed upon the female.

We have the figures of Constantine Paul of the effect of saturnine poisoning of men working in lead, the wives not being subjected to the same effects, and of women exposed to lead poisoning. What is here recorded of experiments on animals can very well be applied to men, especially those affected with syphilis.

The heredo-syphilitic receives a two-fold baleful heritage. In the first place, the germ plasm from which he received his being is injured by the baptism of syphilitic toxins to which it is subjected while resident in the diseased parents. Secondly, while in the womb it becomes inoculated with the virus of the disease, which penetrates every organ and tissue of the body, producing the same widespread morbid reactions recorded in the foregoing, of acquired syphilis. When all these factors are taken into consideration, it is difficult to understand why all heredo-syphilitics are not still-born.

In fact, inherited syphilis is the cause of a fearful waste of life. According to the statistics of maternity hospitals with their underfed, unhealthy applicants, over 70 per cent. of all syphilitic babies die in their first year. Even among the better classes where every possible care is available, the brutally murderous effect on the offspring is appalling. Dr. Hochsinger's statistics, quoted below, show that 55 per cent. of the offspring of syphilitic parents of the well-to-do classes treated by him die before the fourth year.

Dr. Hochsinger, at a recent meeting of the Gesellschaft der Aerzte in Vienna, discussed the results of a series of investigations, extending over twenty-five years, into the ultimate fate of children whose parents had contracted syphilis before the children's birth. Only the better classes of the population were considered, and of these only families in which the doctor had opportunity of constantly observing parents and children for a long period.



Altogether, 139 families with 569 children were observed. The 139 women had 362 syphilitic infants born alive, 253 dead babies and 53 living non-syphilitic children. Of the 263 affected children born alive, 55 died before reaching the age of four, so that 208 individuals were the subjects of prolonged observation. Only 25 per cent. of all of them remained alive and without any attacks. All other patients have shown during their life symptoms of disease traceable directly to syphilis. Apart from manifestations on the skin and mucous membranes, especially affections of the nervous system, together with moral insanity, were most frequent. The well-known fact that hereditary syphilis plays a prominent part in the etiology of these conditions is borne out very well. On the other side, it was shown that if hereditary syphilitic persons remain healthy up to the age of puberty, the expectation of a healthy future life is justified.

The most frequently attacked organs were in the new-born, the skin, the nose, then the viscera. The first-born child is generally more severely attacked than the second; this more than the third, and so on. Also the number of recidives declines with the increasing number of children. Out of 123 first-born children, 93 (or 73 per cent.) had recurrences; out of 55 second-born babies only 24 (or 45 per cent.) had recurrences; and out of 21 third children only 8 (or 38 per cent.) had recurrences. Where maternal syphilis was manifest, the children most often had developments of the disease, showing that the maternal affection seriously influences the fate of the children. The characteristic feature of the late hereditary syphilis was always the gumma; infantilism and general maldevelopment were frequent. Chronic headache is a very frequent concomitant, and very often a characteristic feature of hereditary syphilis. The absence of Hutchinson's symptoms as well as the fairly favorable results during the observations seem to show that an energetic long-continued anti-syphilitic treatment may do much good for the unhappy offspring of a tainted family.

We have seen that syphilis is a widely disseminated and formidable disease, and that it not only seriously diseases those who acquire it even unto death, but, as will be shown further along, their progeny for several generations after them.

It causes in those who acquire it:

1. Diseases of the central nervous system; apoplexy before 50, especially after 40; cerebral softening due to endarteritis obliterans; meningitis of the brain and spinal cord; locomotor ataxia and general paralysis of the insane; dementia paralytica; dementia precox.

2. Diseases of the circulatory system: arteritis, aneurysm, angina pectoris before 40, cardio-vascular-sclerosis, myocarditis, coronary arteritis before 40 or 50. It induces tuberculosis of the lungs in its early and later stages and diseases of the liver and kidneys.

It causes in those who inherit it:

Imbecility, idiocy, epilepsy, chorea, hydrocephalus, endarteritis-syphilitica, encephalitis, juvenile general paralysis, locomotor ataxia, deafness without otorrhea, interstitial keratitis, fetal cachexia, malnutrition, senile expression, malformations, arrested development of the bony skeleton and teeth, precocity and infantilism.

In the heredo-syphilitics who reach maturity, it induces early arterio-sclerosis, nephritis, apoplexy, paresis, disorders of the liver and all kinds of degenerations.

Within the last five years a great advance has been made in the clinic and microscopic study of syphilis, especially hereditary syphilis.

From the clinical side we have Edmond Fournier's admirable work, "*Recherche et Diagnostic de L'Heredo-Syphilis Tardive*," which appeared

in 1907, a mine of carefully collected data, admirably arranged. It has not been translated into English, but a very good German translation has been recently published.

Fournier shows that the heredo-syphilitic is as a rule small in stature, often a dwarf. Bodily development is below the normal for age; head abnormally large, badly formed or irregular, "Parrot's nodes": bones irregular and ill-shaped or insufficiently ossified; bridge of nose depressed, several types; evidence of secondary and tertiary skin lesions: scars particularly about the mouth (rehagades); interstitial keratitis or iritis: deafness without otorrhea; testicle on one or both sides atrophied: teeth of Hutchinsonian type. He asserts that there are four, possibly five pathognomonic signs of heredo-syphilis: (1) the "Nateform" cranium; (2) Hutchinson teeth—upper incisors converging, obliquely set, chisel-shaped with semi-lunar indentations; (3) the sword-shaped tibia; (4) screw-driver shaped incisors; (5) cuspidian erosion of the large primary molars.

In February and May, 1910, Dr. W. W. Graves presented to the St. Louis Medical Society two separate papers on the "Scaphoid Scapula." One was published in the *Medical Record*, May 21, 1910: the other in the *Journal A. M. A.*, July 2, 1910. Both are important contributions to the literature of hereditary syphilis and merit most careful study.

Of the recent laboratory discoveries we have the Wassermann reaction for the detection of syphilis, the Nonne-Appelt test, the lymphocytic count of the spinal fluid, and Luedde's modification of Czapski's corneal microscope for the study of the superficial blood-vessels of the eye.

With the Luedde-Czapski microscope, the blood-vessels of the cornea can be greatly magnified, the blood seen coursing through them, the corpuscles watched floating in the stream, and the vessels' walls studied: whether thickened, crinkled or aneurismal. It is indeed a remarkable advance in the study of the living blood-vessels, and is destined to become of great practical utility.

Through the kindness of Dr. Graves I am enabled to show you a normal scapula and two scaphoid scapulæ, and a series of very good photographs of scaphoid scapulæ subjects. Dr. Graves states that the "scaphoid scapula is an anomaly in development, originating in the progeny from some abnormal circumstance operating in the parents: is thereafter transmitted from parent to child, and so on through several generations, and unless the abnormal circumstance again becomes operative in the descendants, the scaphoid scapula finally disappears, and the racial type again becomes predominant."

Note in this normal scapula, which I hold up for your inspection, that the vertebral border from the spine to the apex is convex. This is characteristic of the normal scapula. In the two scapulæ which I now show you, note that one vertebral border is straight while the other is concave; these two bones are scaphoid scapulæ. The other points of difference between the normal and the scaphoid type are as follows: in the scaphoid type the scapular index is, as a rule, less; i. e., the bone is

longer in proportion to its breadth than in the normal. The vertebral border in the scaphoid type more nearly parallels the long scapular axis, and the spine forms more nearly a right angle with the long scapular axis than the spine of the normal. Dr. Graves speaks of vertebral border buds, which are in evidence on these two abnormal bones. Dr. Graves has traced hereditary syphilis from known syphilitic parents through their offspring to the third generation and in other cases back from the offspring to the diseased parents: verily, emphasizing the scriptural injunction that the sins of the parents shall be visited on their children even unto the third and fourth generation. The heredo-syphilitic is a blighted individual, and the degenerations exhibited in the bony skeleton and teeth (Fournier), and the scaphoid scapula and the blood-vessels (Graves) applies to all the organs and tissues of the body. The blighted individual is necessarily a tender individual. On account of an abnormal cardiovascular system, he lacks the ability to properly nourish his tissues, and therefore has not the endurance to fatigue nor the resistance to disease of the normal man. He rarely lives beyond 60, but dies early, the victim of some acute infectious disease, notably pneumonia or tuberculosis, or in the middle life of some chronic degenerative disorder of the nervous or vascular system. He passes on to his progeny the vicious heritage and thus becomes the source of the short-lived family.

It is not, then, too much to declare that in the great majority of cases, syphilis is the cause of the short family history.

#### DISCUSSION

Julius Grinker: My friend, Dr. W. W. Graves, who worked out this scaphoid scapulæ question, has shown his specimens and I heard him discuss this question at the St. Louis meeting of the A. M. A. The subject itself is extremely fascinating. If one could make a positive diagnosis of hereditary syphilis by merely feeling the scapulæ, what more could be required?

Dr. Graves has spent considerable time on this subject; he has studied many syphilitic families, among several members of which he has discovered the abnormal scapulæ, and he is naturally very enthusiastic on this theme. He asked the members that attended the St. Louis meeting of the American Medical Association to investigate this matter of the scaphoid scapulæ and I am not aware that Dr. Graves had stated that the intimate relationship between scaphoid scapula and inherited syphilis had already been proven.

I think Dr. Baum is correct when he says that scapular anomalies may belong to the manifestations of malnutrition. I have looked for the scaphoid scapulæ everywhere and was surprised to find them in patients who are *certainly not* syphilitic (unless we base our deductions on the supposition that *all* people are more or less syphilitic, which is not true). In my opinion it is a valuable symptom, *in connection with others*, but too much dependence upon it alone should not be placed.

I believe the essayist has given a splendid exposé of what is known on the subject of inherited syphilis and has added the scaphoid scapulæ as a symptom, which is still something we must know more about. However, I think the address is very valuable, because if hitherto we have not been looking for this symptom, we will surely begin to do so now and appraise it at its proper worth.

To Dr. Graves belongs the credit for this arduous investigation, which made us acquainted with a hitherto unknown symptom, whatever its value may ultimately prove to be.



Dr. Geo. F. Suker: This question of scaphoid scapula is certainly an interesting one and I have had it under observation for a long time, at least five or six years.

I am particularly interested in the question of syphilis and mal-nutrition and have found this in accordance with Dr. Graves and Dr. Ravold that the convexity of the scapula may (in general terms) be said to be due to the fact that this bone is not properly filled out from its centers of ossification of the spinal border. Whether this concavity is due to rachitis or other diseases of malnutrition I am not prepared to say. The border may simulate a straight line but they are far from being straight in many of these malnourished children or heredo-syphilitics. I have found the concave border of the scapula in children who were tubercular and rachitic but the marked concavity I have never seen except when they had inherited syphilis.

This scaphoid scapula may not be anything new; still it is a little point which is frequently necessary to observe in order to make a positive diagnosis of inherited syphilis when other stigmata seem suspicious. So far as the teeth are concerned you would not say that every child with Hutchinson's teeth has inherited syphilis. Nor would you say that every one with a seeming interstitial keratitis has syphilis, but when you get these symptoms and in addition have the scaphoid scapula you are almost sure of having syphilis in the family either directly or indirectly, even should the Wassermann be negative.

As to whether the scaphoid scapula is a positive diagnostic sign or not is an open question and has been so for a long time. I have observed some hundreds of these scapulæ in my own clinic and called attention to them off and on, but did not think much about it one way or the other, simply because I did not look upon it as anything new. It takes multitudes of these observations to make a position or dogmatic statement and I think it behooves us to examine the scapulæ whenever we have any suggestion that there might be syphilis.

I am glad Dr. Ravold presented the question and I am sure Dr. Grinker will have to be more conservative in his condemnation of the point and pay more attention to it; not that it is positive, but two and two make four and we sometimes need every possible point to enable us to make a diagnosis.

It is true that the first children born of syphilitic parents show a greater and a more frequent concave scapula border than the subsequent ones. So also is the intensity of this cavity dependent on whether one or both parents are recently or remotely syphilitic. You will find that in children born of tubercular parents or developing rachitis, their scapulæ are not as convex as yours and mine (taking for granted that yours and mine are normal).

There is nothing quite so interesting and perplexing at times as syphilis and every additional diagnostic aid we can have that is not as expensive as the Wassermann is of exceeding value. I, for one, should not want to miss an opportunity of examining the scapula in aiding me in making a diagnosis of inherited syphilis. Perhaps I am not as enthusiastic as some others, but it is merely because, up until this time, I have not considered this as anything particularly new or in any way as a positive pathognomonic sign but only as a strong contributory factor in the array of symptoms proving or disproving inherited syphilis.

Dr. K. A. Zurawski: I should like to add my experience. I am of the opinion that scaphoid scapula should be looked after in all suspected cases. I have two cases under observation right now where there is undoubtedly inherited syphilis. They have all the stigmata, the history is complete, the Wassermann has repeatedly been positive but they have no scaphoid. One is particularly interesting in the face of Dr. Ravold's statement in regard to the priority of birth. She is a young woman, aged 23 years, of splendid physique and development, coming from a recognized and self-confessed syphilitic father. She has an elder sister, who, up to the present time has been, so far as I know, perfectly well and has a well child. Her brother next older than herself died from syphilis in an insane asylum. She was absolutely well until her 22d year when she married. She married a well man. I have examined him. After a year and a half of married life she

developed interstitial keratitis. Coming to me I made an examination and found the Wassermann positive and I found arteriosclerosis. Her brother next younger than she has suffered from some skin eruption all his life. He was born with some patches and has always had them more or less. I have not examined him and so I do not know that he is syphilitic. She has not the slightest deviation of the scapulæ.

The other one is a boy aged 12 years. He has the complete Hutchinson triad yet his scapulæ are perfectly normal. That is as far as my experience with the scaphoid scapulæ goes.

I am much surprised that Dr. Grinker attacked Dr. Ravold so positively as to the relative mortality of syphilis. I am rather inclined to think that Dr. Ravold is right, otherwise how would we explain facts as we know them to exist. In the 16th century syphilis entirely wiped out whole towns. Although we have an enormous mortality still we never hear of whole towns being wiped out. We know that the germ, if it is propagated right along does increase in virulence yet at the same time increases immunity to it and I think it is to this immunity that we owe the fact that it does not, at the present time, create more havoc, at least that it does not have the epidemic character of the first centuries after its introduction.

Dr. Ravold (closing discussion): When invited by your society to make an address upon hereditary syphilis, I was of the opinion that it would not be of general interest and so informed your committee; but the discussion has convinced me that I was mistaken.

In reply to Dr. Grinker's statement, that there are conditions existing in parents other than syphilis which may produce scaphoid scapulæ, it is in accord with the teachings of Dr. Graves, and I will read again from my paper the quotation which he apparently did not hear. "Scaphoid scapulæ is an anomaly in development originating in the progeny from some abnormal circumstance operating in the parents: is therefore transmitted from parent to child, and so on through several generations." Dr. Graves has found that the "abnormal circumstance" in a great majority of cases is syphilis, but does not assert that scaphoid scapulæ are pathognomonic of hereditary syphilis, nor that all heredo-syphilitics have scaphoid scapulæ. A patient presenting scaphoid scapulæ is not declared a syphilitic until a most searching and exhaustive examination is made not only of him, but of all members of his family. It is not the individual of a family alone, but the individuals of a family that are studied, as I tried to demonstrate in the photographs of families thrown upon the screen. The scaphoid scapulæ and the concomitant conditions, the syndrome described by Dr. Graves in his two papers, and which I enumerated in explaining the lantern slide cases, must be found in the individual before the diagnosis of syphilis can be formulated. The cardio-vascular system in particular is so severely injured in hereditary syphilis that it must be carefully interrogated and for this purpose I am acquainted with no instrument which compares favorably with the Luedde-Czapski corneal microscope. With sphygmographic and sphygmometric instruments, the tension within the artery and irregularities in rhythm can be ascertained, but they tell nothing of the conditions of the walls of the vessels. With the Luedde-Czapski microscope, however, not only the conditions within the vessels, tension and rhythm, can be noted, but the structure of the walls of the artery can be distinctly seen and studied as we never before have been able to do. It was my intention to bring Dr. Luedde with me so that he could demonstrate his modified Czapski microscope, but unfortunately his wife was taken suddenly sick and he could not come. However, he informed me that he had exhibited the instrument at the Hull Laboratory recently, and thought that it was as well known in Chicago as in St. Louis.

In regard to syphilization, the slightest acquaintance with the history of syphilis would have convinced any one that syphilization does go hand in hand with civilization. From the first infection of Europeans by the American aborigines in 1492 down to the present time, as set forth in a recent report by Colonel F. J. Lambkin, of the effects of syphilis upon the tribes of the Uganda Protec-

torate, history is full of convincing evidence of the dreadfully disastrous effects of syphilis upon a race virgin to it. I agree most heartily with Dr. Baum that we know very little of the *spirocheta pallida*, in or out of the body, but from my observations of syphilites, and their treatment, and my limited study of the spirillum microscopically, I am convinced that there is a resting stage of the organism in the body, which may account for the prolonged latency in many cases, and which makes the cure of the disease so very difficult and uncertain. It is this stage of the spirochete that is putting to route the enthusiastically heralded and flamboyantly advertised new arsenical specific.

That Dr. Graves and myself are enthusiasts, I am delighted to admit. Dr. Graves has a very good reason for rejoicing for he has discovered a thing that we all have seen repeatedly, but overlooked and in trying to make us see clearly, grows enthusiastic. All honor to him for his perspicacity and enthusiasm. His discovery is a constant source of benefit to me in my practice, as an aid in diagnosis; in formulating treatment, and in making a prognosis, and will be to you if you but study it.

From my paper and from the wide range of the discussion, I think it must have become evident to all of us, that a child should exercise great circumspection in the choice of its parents.

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## THE RELATION OF VASECTOMY TO EUGENICS\*<sup>1</sup>

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The Bible teaches that mankind should increase and multiply and replenish the earth. There are people who, interpreting the Bible literally, arrive at absurd conclusions regarding its meaning and would argue that such an injunction as this means that all families should raise the largest possible number of children and that to do otherwise is to violate a divine command. One of our most distinguished citizens, one whose utterances are listened to most attentively throughout the land, loses no opportunity to urge the people of the United States to propagate to their greatest limits and that without qualification whether their progeny be good or bad, stigmatizing any other conduct as race-suicide. In this connection it may be remarked at the time of the Biblical injunction referred to, the entire population of the earth consisted of only eight persons, comprising the family of Noah.

We all grant that increase of population is the result of a natural law, but the most casual investigation of the subject demonstrates too clearly that neither human life nor any other form of life can multiply indefinitely upon this earth. "The cholera bacillus can duplicate every twenty minutes and thus in one day might become 5,000,000,000,000,000,000,000, with the weight, according to Cohn, of about 7,366 tons. In a few days at this rate there would be a mass of bacteria as big as the moon, huge enough to fill the whole ocean." The fecundity of birds and fishes has often been calculated and it has been shown that their natural rate of increase in a few years would result in the production of a bulk

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\* Read before the Chicago Medical Society, Jan. 11, 1911.

1. Vasectomy is the sterilization of men by double excision of a portion of the vas deferens. Eugenics is the philosophy of race-culture.



so vast that to appreciate it we should be obliged to take as a unit for its measurement the mass of the whole earth. Dr. Franklin showed that both vegetable and animal life is limited only by food supply and space in which to increase. Man furnishes no exception to the natural laws of increase. He has the lowest birth rate proportionate to his weight, the longest period of gestation, he clings longest to the maternal breast and he possesses the lowest death rate, both infantile and general. Obeying the natural laws of reproduction, the human race in all the ages has tended to increase in numbers so rapidly that the food supply falls short of its necessities.

The Greek philosophers clearly recognized the action of natural laws in this relation and formulated plans to meet the exigencies of their own case. Plato<sup>2</sup> proposed to place definite limitations upon the population as regarded the free citizens who were not to exceed a certain fixed number. In each family one son was to inherit his father's land, the daughters were to be married off and the younger sons were to be distributed among families having no children of their own. The absolute number of children was to be limited, an excess being disposed of by law, while a deficiency was to be made up by various encouragements offered on the part of the state to induce additional reproduction.

In this wise numerical strength of population was always to be maintained but not exceeded. In Plato's republic it was proposed that the superior young men should marry superior young women while the inferior men should marry inferior women. The offspring of the former class was to be brought up, not by the parents, but by the state. The offspring of the latter class was not to be suffered to live at all, but were summarily to be disposed of. Likewise the inferior progeny of the better class was not to be raised. Furthermore the law was to prescribe the respective ages at which men and women might marry and how long they were to be permitted to produce children for the state. The period during which procreation was permissible having passed, no living children were to be brought into the world. Should such children, however, be born, they were to be exposed in the same manner as if the parents were unable to support them.

Aristotle<sup>3</sup> entertained similar views. He prescribed the age of marriage and the number of children allowed to each family. If any woman became pregnant after producing the required number of children, abortion was to be procured.

In this connection it may be noted that on October 4, 1910, Dr. Rose D. Howe was reported to have lectured before the Austin Woman's Club on the limitation of population.<sup>4</sup> She was said to have predicted that it will be a statutory crime for any woman to give birth to more than two children when the general death rate shall have been reduced to a minimum. It would appear that her desideratum is similar to that of

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2. Plato: *Op. de legibus*.

3. Aristotelis: *Op. de Rupub.*

4. The Chicago Tribune, Oct. 5, 1910.

the Greek philosophers, though she is less candid than they were in prescribing the means to the end.

After the time of Aristotle, history records little of note in relation to the problems of population and food supply until in the year 1798 Malthus arrested the attention of the world with his masterful essay on the "Principle of Population."<sup>5</sup> This essay is such a remarkable contribution to knowledge that it would seem permissible to give in this place a short history of its production and influence; for although it still constitutes the most notable work on the subject considered and although it awakened the mental activity of some of our greatest modern philosophers, its writer, nevertheless, has been one of the most misunderstood and misquoted of all authors.

Malthus was born in 1766 and was educated at Cambridge where he obtained a fellowship in 1797, in which year also he was ordained as a clergyman. In 1805 he became professor of history and political economy in the East India Company's College, which position he retained until his death in 1834. In discussing with his father the subject of the perfectability of human society, as set forth by various French writers, the latter was so profoundly impressed by the originality and force of his son's opinions that he urged their publication. The first edition of the essay appeared in 1798, after which it underwent great enlargements through successive editions until 1825. The published work was not long in arousing hosts of hostile critics and detractors whose assaults were amply sustained by Malthus in the later editions of his work. But even at the present day there are not lacking those who refuse to accept his doctrines as established facts although to the logical mind they appear not otherwise than the crystallized wisdom of the ages.

Malthus' principle of population is so fundamental in its character, so far reaching in its relation to the problems of social and political economy and so obtruding upon the intelligence of the candid mind that it cannot here be out of place to outline its premises and deductions. The dominant idea is the improvement of society by an inquiry concerning a single impediment in the pathway of man's progress toward happiness, and that is a tendency little noticed although shown by history to have been always present, for life in general and for human life in particular to multiply more rapidly than the means by which it is sustainable. There is only one definite limit to such increase and that is necessity—actual starvation. In the case of man, however, reason enters as a factor and his increase may be checked by preventive measures (which unfortunately may lead to vice), or a constant check will be placed upon him by reason of increasing scarcity of food. Population when unchecked by unfavorable conditions tends to double itself every 25 years, thus increasing in a geometrical ratio. The food supply, on the other hand, under the most approved methods of cultivation cannot possibly be made to increase in like proportion. In a selected area it

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5. Malthus, Rev. T. A.: *An Essay on the Principle of Population or a View of its Past and Present Effect on Human Happiness.*

might even be doubled during the first period of twenty-five years; but it is not supposable that it could be quadrupled in the second period. A most liberal estimation is that it might be increased in each twenty-five year period by a quantity equal to what is now yielded. Throughout the world in general, such a rate of increase would exceed our imagination. In the selected area, then, we may presume that we might expect nothing more favorable than an increase in an arithmetical ratio. To illustrate, these ratios would be as follows: 1-2-4-8-16-32-64-128-256, as compared with 1-2-3-4-5-6-7-8-9. Such a disproportion would, of course, be an impossible proposition and a more just proportion is, in fact, maintained by the action of various checks to the population. The checks may be considered as preventive, or positive; the former consisting of moral self-restraint and vice. The latter are more various and comprise everything that contributes to shorten life: as, unwholesome occupations, severe labor, exposure, poverty, bad nursing of children, city life, excesses, the whole train of common diseases and epidemics, wars, plague, and famine. The checks of all descriptions are classifiable under the heads of moral restraint, vice and misery. These propositions are supported by an historical review of the customs, habits and laws of the various countries of the world. This reveals a series of pictures exhibiting human misery in all its degrading forms, but there is nothing speculative about it. It merely is a presentation of facts. The only speculative feature of the entire essay is the mathematical ratio by which an exact representation of the facts in the case is attempted, but this is by no means to be regarded as an essential feature of the principle itself.

As a remedy for the overpopulation of the various countries, Malthus recommended emigration, which at this time, with its slow and expensive means of communication, as well as its inherent hardships, was only in its infancy, and, as he justly remarked, is a palliative measure at best. The reformation of the poor laws of England by legislative enactments shortly before the death of Malthus, is regarded as one of the greatest triumphs of his work. He maintained that the poor possessed no inherent right to demand support from the government and that when laws were enacted to set apart fixed supplies for the relief of the poor they operated in such a way as to increase pauperism, in that they tended to foster idleness and imprudent marriages. The aim of the reformed poor law was to emphasize the duty of self-support and the responsibility of parentage.

A satisfactory elucidation of many of the problems of social and political economy becomes impossible without due respect being paid to the great fundamental principle established by Malthus. An example of this is seen, as stated by one writer,<sup>6</sup> in the case of India. Here we witness a country with a population which has been redundant for ages and which has suffered from all the concomitant evils of war, plague and famine. Under the beneficent rule of Great Britain many of its

6. Kirkup, Thomas: *Encyclopedia Britannica*.



grossest evils have been removed, some of the greatest enemies of human life and happiness have been banished from the land, the span of human life has been broadened, but there has been no proportionate increase in the quantity of food produced, in search of which we now find large numbers of Hindoos in the western hemisphere and latterly upon our own western coast.

It is interesting to observe the influence produced upon Darwin by the writings of Malthus. He acknowledged his indebtedness in the following words: "On reading Malthus on population, I saw that natural selection was the inevitable result of the rapid increase of all organic beings." Whatever may be thought of the validity of Malthus' doctrine, no reasonable man can find fault with the advice which he gave for relief from the evils of a congested population; his precepts were, to increase the sources of food supply; to relieve a crowding population by emigration; and to exercise moral self-restraint, his words in this regard being: "do not marry until you have a fair prospect of supporting a family."

Darwin changed, as we may say, the whole current of modern philosophical thought by his enunciation, in 1858, of the principle of natural selection, which he formulated in these words: "This principle of favorable individual differences and varieties and the destruction of those which are injurious, I have called natural selection or the survival of the fittest."

Darwin's idea was soon seized upon by another philosopher, a friend and cousin to Darwin, Sir Francis Galton, who, in 1865, published his views on "Hereditary Genius," in which he clearly established the fact that ability is an hereditary trait, something which was quite opposed to the prevailing doctrines of that period. Proceeding from this standpoint and being encouraged by the views of Darwin concerning the origin of species to pursue inquiries suggested by the topic of heredity, Galton has spent nearly fifty years of his life in studies devoted to the uplifting of the human race and has become the recognized leader in the so-called school of eugenics. The aim of eugenics is the improvement of the human race and the promotion of happiness by the extension of Nature's law of selection. The term "Eugenics" was first used by Galton in his work on "Human Faculty" published in 1884 and at his suggestion and with funds supplied by him, the University of London established the "eugenics laboratory," in connection with Prof. Karl Pearson's biometric laboratory. There are various other organizations concerned with the subject of Eugenics, among them the "Sociological Society" of London, and the "Eugenics Education Society," which numbers among its members many of the brightest men and women in England. This society publishes a most excellent journal called "The Eugenics Review." An international society for improving the health of the race has recently been formed in Munich, with Sir Francis Galton as Honorary President. This society seeks to promote the study of scientific biology, racial and social, and of racial and social hygiene by collecting and recording such facts, pathologic and normal, bodily

and mental, as illustrate the workings of the laws of heredity and variation in the case of man, by spreading the knowledge of these facts and the lessons to be derived from them amongst its members and the population at large. It also seeks to stimulate its members to carry out in practice the following principles: to impart their own spiritual, intellectual and bodily efficiency; to agree that before entering on marriage they will submit to medical examination as to fitness for marriage, or at all events for parenthood; to promote by every means in their power the individual and racial efficiency of their offspring.

We have a eugenics organization in this country. It is the "Eugenics Section" of the "American Breeders' Association." The chairman is Dr. David Starr Jordan, of the Leland Stanford University and the secretary is Dr. C. B. Davenport, of Cold Spring Harbor, Long Island, where the eugenics' record office is located. There are five standing committees, each of which deals with a single phase of heredity. The chairman of the committee on "Heredity of Criminality," is Prof. C. R. Henderson, of the University of Chicago. The Eugenics Section is in correspondence with various sub-committees and field workers throughout the country, and seeks to accumulate and study the records of physical and mental characteristics of human families, and to educate the public as to classes of fit and unfit marriages. The American Breeders' Association has published five annual reports, which are said to contain the most valuable body of knowledge extant in any publication on the history of heredity in plants, animals, and man, and on the work of creating improved varieties of plants and improved breeds of animals. The Association publishes a quarterly called "The American Breeders' Magazine."

There is one problem in eugenics which offers much difficulty in its solution, viz., a law of biologic multiplication, to which attention first was called by Herbert Spencer. It appears that the higher the form of life, the less is its power of multiplying. This applies to man as compared with the lower forms of life and likewise to the evolution of the human race *per se*. The point is illustrated by a statement emanating from the census bureau in Washington, which is as follows: "In all parts of the civilized world both the birth-rates and death-rates tend to decrease, and as a rule those countries having the lowest death-rates have also the lowest birth-rates." These statements, however, are not incompatible with a steady increase of population, so long as the birth-rates surpass the death-rates. But should the relative rates gradually become approximated, it is supposable that the human race might finally accommodate itself to the means of subsistence; but unfortunately the very types whose parenthood is the most desirable, become the least fertile, thus hindering the progress of race culture. The eugenicists attempt to meet this difficulty by advising us, as Saleeby<sup>7</sup> says, "to throw all the weight we can upon the side of progress, increasing to our utmost the survival value and the effective fertility of the higher types."

7. Saleeby, C. W., M.D., Ch. B.: *Parenthood and Race Culture*, 1909

The term "Eugenics" is defined by the University of London as "the study of agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally." In reviewing the work of an unusually fruitful life, Sir Francis Galton,<sup>8</sup> at the age of 86 years, in his recently published autobiography, states that he takes eugenics very seriously and finds that its principles ought to become one of the dominant motives in a civilized nation, much as if it were one of its religious tenets. He regards the world as a stage in which evolution has progressed principally by means of natural selection. But man, being gifted with pity, has also the power of preventing many kinds of suffering. He should therefore replace natural selection by other processes that are more merciful and not less effective.

The first object of eugenics is to check the birth-rate of the unfit. The second is the improvement of the race by furthering the productivity of the fit by early marriage and healthful rearing of children. Natural selection means excessive production and wholesale destruction; eugenics, the reproduction of the best of the human race and only in such number as can properly be cared for.

To produce rapid results the horticulturist goes further than Nature. He grows tens of thousands of plants and selects a very few for propagation, destroying the unfit, but this of course forms no part of the system of eugenics. It is proposed, however, to limit the multiplication of those who are seriously afflicted by lunacy, feeble-mindedness, habitual criminality and pauperism. To this end laws have been enacted in various states of our union to prevent the procreation of criminals, idiots, and imbeciles, and in this good work the State of Indiana took the lead, in March 1907, by enacting a certain law.

In the preamble of this law it is stated that heredity plays a most important part in the transmission of crime and mental defectiveness, for which reason authority is delegated to surgeons, appointed for this purpose, to perform such operations for the prevention of procreation as shall be deemed safest and most effective. The credit for the enactment of this law is ascribed to W. H. Whitaker, former superintendent of the State Reformatory at Jeffersonville, and Dr. H. C. Sharp, its institutional surgeon. When the law went into effect there were about 1,200 inmates of the institution, of which number 293 were operated upon by vasectomy. During the first year of the operation of the law there were 426 new admissions to the prison of which 119 were subjected to the operation. It is also to be observed that Dr. Sharp initiated the application of vasectomy in 1899 long before the period of the legal enactment, the consent of each individual to the operation having been obtained.

The subsequent history of these operations has been observed, in many instances, over a period of 11 years and in all cases good results only have been evinced. It has been suggested that we repeal the law forbidding the marriage of defectives and after sterilizing them permit

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8. Galton, Francis: *Memories of My Life*, 1908.



their marriage. There are many defective women in the state institutions of Indiana who are said to be perfectly capable of self-support. At present they are a burden upon the state and it has been proposed to sterilize them and then release them; for if they were released without having been sterilized, there is every reason to believe that they still further would burden the state by reproducing their kind.

In the operation of vasectomy the spermatic cord is readily located by touch, a small incision is made, the vas deferens is separated from the accompanying vessels and nerves and then divided. The distal end is then ligated and the incision closed. Little inconvenience is experienced on the part of the patient, whose usual activities are barely interfered with after the operation, which is readily performed under local anesthesia or without anesthesia, and requires only a few minutes for its completion. The individual is at once and forever sterilized. He is not asexualized or emasculated. His sexual organs functionate as before, with the sole exception that the vital part of the spermatic fluid is not discharged from his body. It is maintained by some observers that resorption of the spermatic fluid into the body produces a most beneficial tonic effect upon certain individuals, as those who have been debilitated by masturbation or weakened by neurasthenia.

Dr. H. C. Sharp<sup>9</sup> (above referred to) calls attention to the fact that many states have passed laws to prevent the marriage of defectives, but that such laws are powerless to effect their true purpose. Segregation, he says, is effective but imposes an unnecessary burden upon the state; while castration is too grave an operation and is productive in itself of mental disturbance, although he approves of it as a punishment in certain cases; castration also abolishes the secretion of a product which is essential to the well being of the body. Dr. Sharp has been performing vasectomy, as stated, since 1899. He reports about 500 cases, none of which has been followed by unfavorable symptoms. Marked relief has been obtained in many individuals who suffered from the effects of masturbation and from mental depression. The operation, he informs us, is recommended by all upon whom it has been performed. In the Jeffersonville reformatory, vasectomy has been performed upon 176 men at their own request to obtain relief from masturbation. Dr. Sharp believes that the law should attach criminal indictment to any one submitting to the operation or performing it without due process of law. Right here it may be remarked that a similar law, passed by the State of Connecticut, August 12, 1909, provides penalties for just such acts. California has a similar law. The States of Pennsylvania and Oregon are said to have passed sterilization laws, but they have not yet been made effective by their respective governors. In Virginia a law based upon that of Indiana is now pending.

Dr. R. R. Rentoul<sup>10</sup> of Liverpool, has been very earnest in his efforts to introduce reforms on similar lines in England, but so far with little

9. Sharp, H. C., M.D.: *Vasectomy; A Means of Preventing Defective Procreation*. Jour. A. M. A., Dec. 4, 1909.

10. Rentoul, R. R., M.D.: *Proposed Sterilization of Certain Mental and Physical Degenerates*. Race Culture and Race Suicide, 1906.

success. He claims to have been the first, in 1903, to recommend vasectomy as a means of checking increase in the number of the insane and in preventing innocent offspring from being cursed by some parental blemish. After enumerating the appalling statistics of criminality and degeneracy in the United Kingdom and showing that 13,081.019 pounds sterling were expended in 1902 upon the mental degenerates and the physically unfit, he recommends: (a) voluntary sterilization, which is to be practiced upon women with deformed pelves, cancer and fibroids; upon sane men and women with incurable diseases of lungs or other chief organs; upon sane people with a history of family insanity and married women who become insane when pregnant or while suckling their children; (b) compulsory sterilization, to be practiced upon idiots, imbeciles, the feeble minded, epileptics, lunatics, deaf mutes, defective and backward children, habitual inebriates, habitual vagrants, public prostitutes and markedly neurotic persons.

In this connection attention well may be called to some statistics regarding our own national conditions. Thus we have it upon the late Dr. Lombroso's authority that in the United States while the general population doubled in a little more than 30 years, the insane population increased six fold.

If there be any reformers, however, who believe that Dr. Rentoul is not quite radical enough in his plans for the amelioration of social and economic conditions in England, there still remains to be considered the advice of W. Duncan McKim, M.D., Ph.D.,<sup>11</sup> which is set forth as follows: "The roll of those whom our plan would eliminate consists of the following classes of individuals coming under the absolute control of the state: idiots, imbeciles, epileptics, habitual drunkards and insane criminals; the larger number of murderers; nocturnal house breakers; such criminals whatever their offence as might appear very dangerous, and finally criminals who might be adjudged incorrigible. Each individual of these classes would undergo thorough examination and only by due process of law would his life be taken from him. The painless extinction of these lives would present no practical difficulty—in carbonic acid gas we have an agent which would instantly fulfill the need."

In the presentation of the aims of the eugenists in general and the vasectomists in particular, it has been the writer's endeavor to observe the ordinary methods of logic. By the inductive methods of scientific investigation, Darwin and Galton discovered important principles affecting all forms of life from the lowest up to man himself. By deductive reasoning, the eugenists are endeavoring to apply these principles to the end that human prosperity may be increased. It still remains to illustrate by statement of facts, the agencies that are concerned in a great struggle now going on whose end is the survival of the fittest among nations—a struggle so gigantic that the interests of the individual are quite lost sight of.

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11. McKim, W. Duncan, M.D., Ph.D.: *Heredity and Human Progress*.

In spite of our modern methods of philanthropy, in spite of our more general diffusion of knowledge, and in spite of more rapid international communication, it still remains impossible to harmonize international interests. At the bottom of all the difficulty lies the failure of food to keep pace with the population. This is the chief cause of political unrest everywhere. Consider the case of England. The United Kingdom produces only one-eighth of the wheat which it consumes. The amount of food of all kinds kept on hand would suffice to supply the population for a period of three weeks only. In the present piping times of peace it is said on excellent authority,<sup>12</sup> that 30 per cent. of the population are living on the verge of starvation. Saleeby states: "We are for the first time beginning to feel the effect of a great national problem—the race between population and food supply." "The question is how will the population be kept down? By the bloody processes of Nature, or by the provident and human methods of man?"

Sir William Crookes stated twelve years ago that "the actual and potential wheat producing capacity in the United States is, and will be for years to come, the dominant factor in the world's bread supply." He also expressed the opinion that a permanently higher price of wheat was a calamity that soon would have to be faced. He also declared that the augmentation of the world's eating population in a geometrical ratio is a proved fact; that within a generation the United States will require all the wheat grown within its borders; that Caucasian civilization is founded upon bread; that we must learn how to fix the nitrogen of the air, how to combine it in forms upon which the plant can feed and that unless the fixation of nitrogen can be classed among the certainties to come, the great Caucasian race will cease to be foremost in the world and will be squeezed out of existence by races to whom wheat and bread are not the staff of life.

Three methods have been devised for the fixation of atmospheric nitrogen. The first is that of Crookes, whereby atmospheric air is subjected to high temperature by means of electric arc discharges. It involves the use of very cheap electricity and is in use in Norway. In the second method, nitrogen is separated from the oxygen of the air by distilling liquid air. In the third method, ammonia is produced by chemical combination of nitrogen and hydrogen, a plan requiring a very high degree of pressure. Relevant to this subject attention may be called to the work being done by our agricultural department in Washington, which sends out to the farmers packages of bacteria to be sown in the ground for the purpose of enabling the plant to obtain its nitrogen from the air.

Another agricultural expedient is now being employed whereby, it is said, worn out farms may be brought into a high state of productivity by enriching the soil with phosphatic rock, the presence of which enables the plant better to avail itself of the potassium salts present in the soil. Phosphorus is one of the three essentials to the growth of

12. Rowntree, Mr. Seebohm, and Booth, Rt. Hon. Charles: Quoted by Saleeby in "Parenthood and Race Culture."



plants. The supply of phosphorus, while absolutely limited, is relatively great in this country. Approximately one-half of the annual output of our phosphorus is now being exported. Whenever phosphates are discovered on public lands, these lands are withdrawn from entry by the government, which is also contemplating a positive prohibition of exportation of phosphates from public lands as a necessary measure for the conservation of one of our most valuable natural resources. The value of phosphates to the grower of grains has been shown in experiments made by the State of Ohio, which demonstrated a financial return to the farmer equal to 376 per cent. on his investment in phosphates for his crops.

Interesting educational work is being done by various railway companies, which are sending out demonstrating trains called "Corn Specials." "Better Farming Specials." "Dairy Specials," etc., whereby improved methods of agriculture are being taught right in the heart of the agricultural districts.

An English political economist,<sup>13</sup> writing thirty years ago, stated that "for a series of years the national expenditure for food has gone on increasing simultaneously with diminishing receipts from the sale of manufacturers." "Since 1872 each year has been worse in this respect than its predecessor." "Every succeeding year the home necessity affords a less amount of food per head of its population, and every year the money value of our exports is also less per head." This writer begins his treatise by hooting at the timid Malthus, who feared that England would become overpopulated. He then figures on the numbers lost to the population by emigration. Calculating that each emigrant was possessed of an economic value to the state of 259 pounds, he reaches the conclusion that England has made a present to the world, but particularly to the United States, of a sum of money amounting to \$7,000,000,000. To the man in the street (as Sir Francis Galton would say), this would seem to be a gift which England could ill afford to part with. The same writer referred to, tells us that still further emigration from England is most highly desirable and that presently the most important man in the British Ministry and the greatest benefactor of his race, will be the one who best knows how to deal with the problem of emigration. He also informs us that "France, of all European nations, is the one of most increasing prosperity. With half the population of Russia she has double her trade; but exceeding the population of England, has only half of the latter's trade. She imports more than she exports, but manifests steady growth in wealth and power." And yet our British economist winds up this part of his statements by affirming that "security of happiness lies in the fulfilling of the terms of the charter whereby we hold possession of the earth: 'Be fruitful and multiply and replenish the earth.'"

At the present time, it is only fair to state, trade conditions in Great Britain are much more satisfactory than they were a few years

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13. Bourne, Stephen: Trade, Population and Food, 1880.

ago, the past year indeed, having been one of unusual prosperity. On the other hand it should be remarked that Asia is awakening to industrial life. Japan, India and China are all becoming producers instead of being merely the consumers of the products of Great Britain and the United States. In estimating the power they are destined to wield in the world's trade, it must not be overlooked that they possess advantages of the utmost importance: on the one hand they are able to manufacture cheaply because they produce much of their raw materials, because they use the newest and most approved machinery, and because their markets are near at hand, which means a great saving in the items of freightage and insurance.

An interesting eugenic publication is that of Montague Crackanthorpe<sup>14</sup> which was published two years ago. Referring to a speech by Lord Avebury, in 1906, he informs us that ten years prior to that time England's naval and military expenditures were 35,600,000 pounds. In 1905 they had risen to more than 66,270,000 pounds. During a similar period, the naval and military expenditures of Italy had increased by 1,500,000 pounds; those of France by 6,000,000 pounds; those of Germany by 8,700,000 pounds. The increase in England was over 30,000,000 pounds.

In the United States we have a population of about 92,000,000 as compared with 350,000,000 in Europe. The expenditure of Europe on armament is over 250,000,000 pounds; that of the United States, 40,000,000 pounds, while the number of men under arms is as 4,000,000 to 100,000. "It is obvious, therefore," said Lord Avebury, "that our European manufacturers are heavily handicapped as against those of the United States and unless something is done, will be so more and more."

In answer to recent inquiries in England regarding the enormous increase in the cost of government, Chancellor Lloyd-George, at the Lord Mayor's dinner last July, made the following statement: "The increase of expenditures not only in England, but in every land under the sun, is due to what Lord Charles Beresford called the insane competition in the armaments between the various countries of the world. They are now spending annually \$2,250,000,000 upon this machinery of destruction. All of the nations seem to be infected with an epidemic of prodigality in this respect which seems to be sweeping over the world and sweeping to destruction. It is impossible to stop this wild expenditure on armament until the people of the world reach an amicable understanding."

In Germany the economic conditions are equally perplexing. "Why is it," says one authority, "that we find peace and prosperity in France, where during the last 50 years the population has increased by four millions only; while in Germany, where the population during the same period has increased by twenty-six millions, there is a constant state of unrest?" The reason appears to be that France does not require an

14. Crackanthorpe, Montague: *Population and Progress*.

outlet for an excessive population, while Germany is compelled to seek such an outlet and only by colonization can she find it. Unfortunately for Germany, she possesses no such extensive and fertile colonies as does Great Britain and for that very reason is apt to come into collision with the latter power. Germany is rapidly building up a modern navy at enormous expense. She is building ships of the dreadnought type as rapidly as Great Britain and has provided deep water harbor facilities for them at Heligoland Island. At the present time the island of Borkum is being fortified to increase still further the strength of Germany in the North Sea. An English writer recently has described Germany as "immured in a geographical prison, the walls of which are spiked by the powers of the Dual Alliance, from which she must either burst or acknowledge defeat." Overtures have been made to Germany by Great Britain on various occasions with a view to limiting the extent of their respective military and naval armaments, but to no avail. The *London Mail* has recently made the following editorial statement: "Germany has, of course, a perfect right to develop her naval resources in whatever manner and to whatever extent she chooses. But her devouring activity in the North Sea and her relentless rivalry for naval supremacy can not leave us indifferent to the danger that steadily advances toward our shores. There can be only one answer to the challenge. We must build and build again until this new and immeasurable advantage which Germany is wresting from the sea is more than balanced by the unquestionable supremacy of our fleet." By the year 1913 it is estimated that Germany and Great Britain will each be provided with sixteen dreadnoughts, the enormous cost of which furnishes some idea of what the people must suffer from taxation. It might be thought that with dreadnoughts costing from \$7,000,000 to \$10,000,000 each, the limit of naval extravagance had been reached; but our own government has been considering the propriety of building two warships to cost \$11,000,000 each, and another to cost \$18,000,000, while Japan is now building in England a warship which is to cost \$12,500,000. As for dreadnoughts in general, the first one ever built was launched five years ago in England. The world powers have provided in all for eighty-eight such ships, twenty-two of which have been completed.<sup>15</sup>

In our own country economic conditions, of course, are infinitely happier than abroad; but it will surprise a good many easy-going people to learn, as they ought to learn, that already we are beginning to feel the press of population. The limits of corn production have almost been reached so far as acreage is concerned. The production of wheat can be increased largely, but it is believed by good observers, both foreign and native, among them Sir William Crookes in England, and James J. Hill in this country, that the United States will not be able to export wheat for more than 25 or 30 years and that long before this

15. In the naval budget of Japan for 1911-12 she appropriates \$43,050,000, as compared with \$17,600,000 for 1909-10. Our own naval appropriations for 1910 were \$137,000,000 and the estimate for 1911 is \$126,000,000.



period has elapsed the existing slovenly methods of agriculture must give way to more rational plans. We are now experiencing the effects of a crowding population in the increase of living expenses and it is high time to make ready for changed conditions in national interests. Always, heretofore, foreign immigration has eagerly been sought; but we well may pause to consider whether it would not have been better for our country to have developed more gradually, in which case we now would neither be deploring the exhaustion of our natural resources, nor inquiring how to Americanize a vast horde of aliens gathered in from every country under the sun.

Montague Crackanthorpe, president of the Eugenics Society of London, has admirably illustrated the problem of population in the following parable:

"A man with a genius for observing the habits of ants was minded to parcel out a small plot in his garden for the purpose of harboring an ant's nest. He built a wall of brick round this plot and started a colony of ants upon it, allowing them ample room for their operations. In course of time the ants began to multiply and to separate off into distinct tribes, not always on good terms with each other. As multiplication proceeded every available inch of space was occupied by the busy insects. After several serious inter-tribal encounters, they at length agreed not to quarrel except when their 'vital interests' were concerned. A question then arose: 'what were vital interests?' and they appealed to the owner of the garden for advice and assistance. His decision caused some surprise and not a little indignation. It was that, if they had become too numerous to find accommodation in the plot assigned to them, their vital interests were certainly affected; but that as their vitality was entirely within their control, he could do nothing for them."

From the above premises it would appear that the following conclusions may fairly be drawn:

1. That Malthus' principle is verified by present conditions of population.

2. That overcrowding of population in various countries is one of the chief causes of political unrest.

3. That there is urgent need of wide-spread effort to promote race culture, which is the antithesis of race suicide.

4. That in the operation called vasectomy we possess one valuable eugenic agency for the uplifting of the human race.

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#### DISCUSSION.

Dr. G. Frank Lydston:—I am afraid I shall be unable to do Dr. Hoag's paper justice in discussion because so many points have been brought out.

It is true that Dr. Sharp was the first to put into practical application the principles of vasectomy as a prevention of the spread of crime, but it is not true that the credit for the first published work should be given to him, or that Indiana should be credited with having taken the lead in the matter of publicity.

Chicago is entitled to some of it. Ochsner did some work on this subject before the work done by Sharp, and I did some on the general subject of sex mutilations as a remedy for crime. Dr. Ochsner's paper was published in the *Journal of the American Medical Association* in 1899. Dr. Sharp's first paper appeared in the March issue of the *New York Medical Journal*, 1902.

The question of operation on the sexual organs for the prevention of crime is not new. It was first brought before the American public fifty years ago by Dr. Gideon Lincecum of Texas, who introduced a bill into the legislature recommending castration of criminals. Little was said on the subject, however, until the publication of an article by Hunter McGuire and myself, in which I recommended castration as a cure for rape and some other crimes. The subsequent history of the presentation of the idea in various forms presents the names of many of our prominent men.

In 1906 I read before the Illinois State Medical Society a paper on "Vasectomy, with Especial Reference to Crime" (published in the *Journal of the American Medical Association*). Dr. Belfield published a similar paper in 1908. My book on the "Diseases of Society" appeared in 1905. That, so far as I know, is the Chicago literature to date, so you will see a certain amount of credit for this work should be given to Chicago.

I shall not go extensively into the operation in relation to crime, because this happens to be the title of a paper which I am to read before this society very soon. I did not know, at the time I sent in the title of my paper, that Dr. Hoag was to have one on so similar a topic.

I wish to ask two questions:

Dr. Hoag: Did you state that the highest forms of a species were the least propagated?

(Dr. Hoag: I said that it was generally conceded that the higher state of cultivation, the fewer were the progeny.)

Is it your own opinion that the lower forms propagate very rapidly? (Yes.) Very well. That statement is generally made, that the least-fitted types among the human race are the ones which multiply most prolifically, and the higher the civilization the less the offspring. It also goes without saying that the restriction of the offspring is one of the results of civilization. However, what we term the "highest forms" are so merely from the viewpoint of civilization. They are not necessarily the highest forms from a biologic standpoint.

There are some inconsistencies in observations that bear particularly on the results of vasectomy. Henderson recently was quoted as saying that celibacy was a cause of crime. If crime is largely due to celibacy it would have some bearing on this. It is granted that the habitual criminal is largely a celibate. Wandering from place to place, or spending most of his life in prison, he cannot possibly develop whatever domestic tendencies he may have, and we could hardly expect him to settle down and raise a family. But the problem of the propagation of criminals by illegitimate offspring could be, in a large measure, handled by vasectomy.

In regard to the restriction of families: the illogical view has been very widely circulated that the best types of families are the ones which have the largest number of children. Obviously, the keynote of the situation is the improvement of the children which are born, the parents having only that number which can be properly reared and educated.

With relation to the food supply to civilization, Buckle, in his "History of Civilization," calls attention to the fact that when the price of wheat goes up the number of marriages and of children born lessens in proportion. Taking this into consideration, it is very easy to attribute to the present high cost of living the lessening number of marriages and the relatively small birth-rate. This, of course, is but one causal factor.

Darwin might have gone a great deal farther back than Malthus for his reasoning. Every one will agree, I believe, that the very foundation for our ability to improve breeds of stock and species of plants lies in the fact that we are able to govern their selection.

The Hindoos worked out the problem of natural selection in the thirteenth century. In a book called *Masnavi*, the entire scheme of evolution appears. The author I do not know. The only name given is Jalal ad Din, which in India is merely a title, not a name at all. We would know about as much of the author of one of our books if it was said to have been written by a colonel or a judge. In that book, as I have said, is outlined the entire scheme of evolution.

"First man appeared in the inorganic state. Then, as you know, he arose from the inorganic state into the vegetable, from which he arose, as you know, until he became wise and knowing as he is now."

Now that, I believe, outlines about as prettily as could be the generally accepted story of the origin of man. Darwin followed others, as you are well aware. Lamarck, Goethe, Wallace, Spencer, and prior to the writings of these latter there were the poems of Lucretius and the works of Darwin's own grandfather, Erasmus Darwin. But Darwin was the one who first practically applied evolution to human life, and that is one of the many reasons why he is always first mentioned in this connection.

I will say a word about the operation of vasectomy. Of course, it is being heralded as a panacea, and like most panaceas, is likely to have some application by social quacks. The operation is usually done by the technic given by Dr. Hoag, but we can restore the vasa deferentia just about as fast as another operator can perform the orthodox operation of vasectomy. It can be done, however, by removing the entire vas, high up, so that restoration is a much more difficult process or even impossible.

With regard to the theories of Malthus: had he been a biologist we could not have been surprised at his deductions or the permanency of his views. Had he known anything of the important questions of biology he would not have gone so deeply into the question of food supply. In 400 years, according to Malthusian figures, there would be a human being for every square foot of soil in the United States. But Malthus did not know that the same biologic laws control the human race that control all other species. The Doctor said something about the multiplication of bacteria. It is true that they do multiply very rapidly, and were it not for the fact that they are destroyed in very large numbers by other bacteria, there would, by lack of food and other vicissitudes of environment, soon be no room for anything but bacteria. The same thing, practically, applies to the human race.

The greatest difficulty in eugenics is that we cannot take a man or a woman and command them to do thus and so for the good of the race in matters involving sentiment, personal preference, expediency, etc. It is beautiful, I will admit, to sit down and work this all out, but when the bandy-legged gentleman wants to marry the cross-eyed lady there is usually no question raised of morals or physical fitness or anything else.

Another great trouble is that "fit" biologic types and "fit" social types do not always harmonize. How are we going to decide which really is the highest type of human being, the highest social type or the highest biologic type?

Our lack of control of environment also has something to do with these matters. There is, of course, adaptation and a certain amount of choosing and modification of environment, but we cannot place each human being in his natural conditions, and when we come to apply eugenics we must remember this point. A great many of the conditions, within the range of social therapeutics, which we wish to control by vasectomy, are due to our artificial environment. The price we pay for what we call the highest type (I deny that it is the "highest type," but I will call it so because we all hope to be included in that type) of civilization has in it a great mixture of selfishness. I believe that there is a good, natural, healthy sort of selfishness; I believe that even altruism itself is merely a sort of concatenated selfishness. We are likely to think that "the greatest good to the greatest number" is being fulfilled if something is being done that we wish to have done.



I remember a story Lincoln told of himself at one time: He was driving along a muddy country road, all dressed up in his high hat, long-tailed coat and gloves, on his way to make a speech. As he drove through a particularly muddy stretch of road he saw a pig mired in the mud and squealing for all it was worth. He considered the matter and the chance of his being able to relieve the distress of the pig and yet not spoil his own cosmetic perfections, and finally came to the conclusion that it was impossible, and that so far as he was concerned, Mr. Pig would have to stay where he was. He drove along some miles further, but he was so disturbed in mind that he finally turned about and drove back to relieve the pig.

Telling the story later, he was complimented on his kindness of heart, and in reply said that the pig was the least consideration: that he turned back to relieve his own feelings. That is about the way we usually relieve others. When our own conscience bothers us so that we can get no rest, we do the things which we should do and then try to persuade ourselves that it was our great kindness of heart that prompted it.

It is just as essential to select the fit for breeding as it is to eliminate the unfit. In considering the propagation of the unfit there comes into play the lack of opportunity among the unfit. We must remember that a very large number of the unfit are segregated in our public institutions. In the aggregate the number so segregated is very large.

A point with reference to the dangers of blood and type contamination: We frequently hear people boasting that they are "blue blood all the way back" . . . that there is nothing in their families of which they are ashamed. I will present a diagram which I frequently use to illustrate the fallacy of this to my classes:

(Here Dr. Lydston made a diagram on the board showing the number of persons involved in the ancestry of an individual, and how absurd it would be for one to assert that there was nothing in any of those lives for which he could not vouch.)

I take it that everyone here will grant that the same biologic laws control all animal life, although the action of the laws may vary in intensity. It is different with us than it is with the savages, and different than it was with our forefathers, but still, in the main, the operation of the laws is the same.

I believe that acquired characteristics of certain types can be transmitted (although some students of heredity deny this). For instance: when an individual becomes an inebriate, or by reason of an accident or brain disease there develops serious nervous disorder, I believe that a disease tendency or developmental characteristic may be transmitted to the offspring. Granting this, is that person as fit as he was before the accident, merely because his ancestry was not tainted or abnormal in type?

Referring back again, if you please, to what may have happened during the family history: I have on my farm a fowl that has only one-sixteenth of a certain blood strain. I can trace his ancestry back for ten years. Since that time there has not been a single bird of that stock that has had any of the characteristics of the original strain. This year I had ten young fowls (the female parent of strain being entirely different from the father) two of which are exact duplicates of the male progenitor of ten generations back.

Here is a point with regard to eugenics that is of value. If we wished to perpetuate a uniform human type we would have to inbreed. In breeding fowls and other animals, if one wishes to perpetuate and perfect a certain type, one must inbreed. Then one must line breed, and I will explain in a moment what I mean by that. This idea of the impropriety (to use no stronger term) of the intermarrying of human cousins is about as stupendous a fallacy as was ever perpetuated. It is true, however, that if you inbreed and there are imperfections, i. e., if the individuals selected are not absolutely fit for propagation; if there is any tendency which you would avoid in the offspring, you will have it in greatly exaggerated form in the progeny of inbred parents.

If you want a perfect type of animal the thing to do is this:

(Here Dr. Lydston illustrated by diagram proper mating, which would be valueless without the illustrations.)

Successful inbreeding is a little more difficult among domestic animals than it is among wild ones, i. e., the results are not as good as when the animals are running wild.

Here is a peculiar thing that occurs. If you take a certain type of oriental fowl that has a short thick "pea" comb and cross it with the American variety having a "saw" comb the progeny is a compromise between the two parent types. You do not have a perfect type of either one. In my experiments of something over ten years I have never seen any of these cross breeds in which the progeny showed the dominant characteristics of either ancestor. If the progeny cross breed are bred "in and in" part of the next generation will be American and part oriental in type, at least physically. Sometimes other traits will be reversed, thus giving an American appearing bird with oriental laying habits, and *vice versa*.

I have some very small toy fowls, very bright red and black in color, which have been bred for about twenty-five years by a friend of mine and for ten years by myself without an out-cross. Some years ago a male bird appeared in the flock which had no male plumage except a blue wing bar. I tried to breed that out and now I have several male birds without any of the characteristics of the male bird and the wing bar itself has disappeared. In brief, I have originated a new type from what was primarily a biologic "sport."

Under favorable circumstances, properly controlled polygamy might perhaps be the logical biologic way to apply the science of eugenics to the human race.

One point I wish to bring out which I have absolutely proved. Take a type that is absolutely perfect, which you have studied and think you know all about. Cross breed and you will develop a lot of things in the way of type variations that you never supposed were in the blood. The more alien the infusion of new blood, however, the less likely this is to be true. Take two perfect types of different blood and on crossing them you will often find that something has been introduced that is not as it should be. You may say the ancestry was not perfect, or you may put it down as the result of some subtle chemistry of the blood, but whatever the explanation, the fact remains that certain crosses, as breeders say, fail to "nick." The parental type is beyond reproach, but the progeny is bad. The application of these points in breeding to the human species needs no special pleading.

Dr. T. J. O'Malley:—I have been deeply interested in the paper read by Dr. Hoag and in its discussion by Dr. Lydston. Now, as ex-chief medical officer of the Northern Illinois State Penitentiary, I think I should say a few words. I desire to testify to the accuracy of the views expressed by both Dr. Lydston and Dr. Hoag. Looking into the records of this institution, as well as of those of New York and London, we will see records of a man whose father and grandfather had been prisoners in the same institution (sometimes for the same sort of offense). Frequently the father and son were imprisoned at the same time.

Once after Dr. Lydston and Dr. Henderson had visited the institution, I asked them what they would suggest to prevent this state of affairs. At once Dr. Lydston replied "vasectomy." I went before the Board of Commissioners and suggested Dr. Lydston's remedial agent. They said it was impossible; that it was decidedly against church principles, and that, in addition, we did not have laws which would enable us to do it.

My view of the matter is this: That the members of the medical profession should get together and, in as short a time as possible, seek the enactment of a law which would make possible this procedure. It would be an inestimable benefit to mankind.

Dr. K. A. Zurawski:—I have learned quite a little from this paper, and am only sorry that Dr. Hoag tacked onto his scientific paper his views of the cause of our political unrest. And why drag in Malthus theories? The trouble with

Malthus is that he was not a scientific man. He was merely a traveler and a close observer. He was an Englishman. The English, as you know, usually stay at home, but when once they begin to travel and happen to be (as Malthus was) possessed of keen observation and of the ability to say things in a sharp, pointed way, they carry a certain amount of conviction at home, but his books were written at a time when various phases of political economy were not understood, and when political economy itself was in its infancy for lack of data.

Malthus forgot, in his theory, that he was figuring on England alone, when he said that there would come a time in the existence of mankind when we would come to a brick wall in the matter of food supply. He forgot that there were other countries that could supply food for the entire universe and to spare.

Besides, it may not be uninteresting to mention that Malthus himself did not really work out this theory. It belongs to David Hume, who promulgated it some ten years before; so I think we can easily let old Malthus rest in peace where he is, so far as this matter and its application to eugenics is concerned.

The trouble with our food supply is that it is wrongly distributed. We have our population thickly centered in a few places, and then there are great areas, capable of raising wheat enough to feed the whole world, which are not being used because of the impossibility of getting the grain to market. Half of the product of the fields of Russia is turned into alcohol, as the grain itself is too heavy to be profitably transported. On the other hand, we do not have to go to Russia for example of this. Right here in our own United States an enormous amount of alcohol which we are selling at 40 and 50 cents a gallon is made from the grain which should feed the people. Does the high cost of living mean that we have not enough grain to feed the people, and yet we practically burn it up (change it to alcohol). Something is wrong somewhere, but it does not seem to me that it is with the ability of the earth to feed the people.

Dr. Hoag has mentioned also the question of immigration, intimating that it is not an unmixed blessing. Well, I have a little to say in answer to that. Some time ago, reading a biography of Washington, I read that he traveled from New York to Trenton; of course he traveled by post, and it took him from three to four days to accomplish the journey. Now we make that journey in about two hours and with a degree of comfort which he never dreamed of. His journey cost him \$180 (and in those days the buying possibilities of a dollar were about ten times what they are now), and it costs something like a dollar to make the journey now. Why the difference? Because at the time of Washington there was almost no immigration; there were not enough people to do the actual labor of road-building. Thanks to immigration we travel cheaply, comfortably and quickly.

Coming back to the chief subject of Dr. Hoag's paper: I think I shall also have to take issue with him on his statement that the highest types are the least prolific. I should say that the difference is not in the degree of civilization of a given type or race, but simply in the fact that the higher types, the more intelligent, understand better what they are doing when they bring children into the world. They know that they must be raised and educated and they can calculate the expense of this, and then they figure the number of luxuries they will have to deny themselves in order to raise their children, and they govern themselves accordingly. That will account absolutely for the smaller amount of children in France and in other countries.

One hears so much of the "impulsive Frenchman." I tell you the Frenchman is far more methodical than the German. He does everything in the world to raise not more than two children, but he raises them and conducts his own entire life in such a way that when he dies he leaves them a certain amount of income, "rent" it is called, and that will account for the small birth-rate; not the fact that they are *unable* to have more children. The same Frenchman, when he leaves France and goes, for one reason or another, to one of the colonies as an aristocrat will have flourishing around him six, eight or ten children. Why? Because the means of livelihood are easy there and he will not have to wonder how he is going to be able to leave those children in comfort and ease when he dies.



So, the restriction of progeny is not a question of race, not a question of higher mentality, but just simply a matter of selfishness. The same thing is true of our own small infantile population in the eastern states.

When it comes to the question of political unrest, which Dr. Hoag also ascribes to the lack of food supply, I think again his theory will not stand the test. That, too, is a question of having and not having which we can readily understand when we bring to our mind the fact that in our own country, a few over one thousand people out of ninety-two millions are possessed of three-fourths of the country's wealth. That is where the trouble comes in. It is not the *lack* of wealth, it is not the *lack* of food, but the wrong distribution of it.

Then, again, I believe that a good deal of our political unrest is a racial unrest, which is contrary to the Malthusian theory. If he was correct, the countries having the least population would have the greatest quiet. Now we know that practically the opposite is true, as we see in Russia.

We find that in the past fifty or sixty years we have heard of all sorts of races and countries of which we had not the slightest knowledge before. We hear of their customs, their policies, what they have and do not have, and it is this awakening national as well as an individual self-consciousness of hitherto dormant races which, I believe, will account in some measure for the political unrest.

Junius C. Hoag (closing the discussion): One of the speakers took the ground that the whole trouble with society lies in the unequal distribution of wealth. He thought that if we would adopt the single tax wealth would be equally distributed and everybody would be happy. But such opinions as this have nothing to do with the argument with which we are now concerned. The argument is that population naturally tends to increase more rapidly than the food supply and that therefore we should seek to discourage the procreation of helpless human beings who are only a burden to society and aim to encourage the multiplication of those who are sound and capable of self-support. The eugenicists do not expect to revolutionize the world in a few years, but they do hope to create a healthy public sentiment that will demand national laws looking to the improvement of the human race, and they hope to educate the public with regard to the duties they owe their families and their descendants.

No one doubts that the human race is and always has been wasteful of life and of the means whereby life is sustainable, but there are not many who seem to realize that we are even now beginning to feel the results of such wastefulness in our present circumstances of life. One of our present burdens is the taxation required for maintenance and increase of armies and navies, the demand for which is occasioned by the unhappy condition of those people who have overcrowded their own countries and are now reaching out for others. For the relief of such conditions it is necessary to improve the human breed, and teach economy and the better utilization of the gifts of nature. This idea may be illustrated as follows: there are three essentials to the growth of plants, potassium, nitrogen and phosphorus. We can take coarse unproductive sand and by introducing these three elements produce plant life abundantly; but leave out any one of them and our efforts are futile. Germany is the chief possessor of the potassium salts; the United States possesses three-fourths of all the known phosphates. As for the nitrates all have access to them in the atmospheric air at least. In the State of Illinois, it is stated, the upper seven inches of the soil contains 1,191 pounds of phosphates to the acre and every time a seventy-five bushel crop of corn is raised 17 pounds of phosphate are used up. So far as human knowledge now extends the capabilities of the soil are absolutely limited by Nature and it behooves the human race to practice economy in wisely cultivating the earth.

With regard to the increase in population, I have been unable to find that any one has successfully refuted the doctrines of Malthus. When he expressed the opinion that the human family tended to double in number every twenty-five years he probably did not exaggerate. In the case of the Pitcairn islanders the population increased ten fold during a period of forty years. In France, where the population increases slowly, it has been pointed out that the sparsest population is found in the rich southern provinces, while the densest population is

found where the climate is bleak and the land poor, as in Brittany. It is stated by some writers that such relations hold good in all countries. This indeed corresponds with Herbert Spencer's dictum, the higher the type of life, the less its multiplicity. Stock raisers have long known that when their animals become too fat they cease to breed and horticulturists make similar observations with regard to their own productions. Hugh Miller observed seventy years ago that on the inhospitable coast of Scotland the tobacco plant when first set out would grow to a height of four feet; but in each successive year it dwindled until in a few years it would reach a height of four inches only, and then when threatened with utter extinction it appeared to exert all its energy in its efforts to reproduce its kind, as seen in the unwonted profusion of its flowers and seeds. The poor tobacco plant, said Miller, was like the impoverished Irish whose productivity is so great that were all other nations obliterated they alone would be able to replenish the earth. From such considerations as these we argue that the paucity of the French is not altogether a matter of choice but largely the result of a natural law.

A law permitting castration would probably be declared unconstitutional in that it would be an unnatural and unusual punishment, an objection that can hardly attach to the law regarding vasectomy.

As regards priority of claim to the operation of vasectomy, I am not qualified to speak. The earliest operations of which I have any knowledge are those performed by Dr. Sharp in 1899.

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## THE TREATMENT OF DELAYED RESOLUTION OF PNEUMONIA\*

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Delayed resolution of pneumonia is a condition of considerable clinical interest from diagnostic, prognostic and therapeutic standpoints. We are not always able to tell just why the exudate fails to resolve; we are often concerned because of the probability of permanent crippling of the lung as a result of a tedious and incomplete resolution and we are forced to abide the ineffectual results of therapeutic measures which are empirical and unsatisfactory.

The clinical associations of delayed resolution have a wide variety, and while it is true, as stated by Leyden, that it occurs in old, debilitated patients and in those who exhibit sequelæ, it is also true, as stated by Aufrecht, that a pneumonia which is of typical course and which exhibits a crisis may also show delayed resolution. It occurs in all kinds of patients, at all ages, in various types and combinations of infections, the one almost constant feature of its occurrence being related to its topography. It is almost exclusively a feature of pneumonias occurring in the lower lobes of the lungs. This is especially true of cases where the failure of resolution is purely due to intra-alveolar conditions, such as failure of autolytic digestion from absence of proteolytic enzymes and is not connected with lung abscess or encysted pleural effusions.

McCrae, of Baltimore, states that three-fourths of the cases of delayed resolution occur between 17 and 40 years of age; that the colored race shows high incidence as compared with the white race; that apical

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\* Read before the Chicago Medical Society, Jan. 11, 1911.

location, advanced age, debility and cachexia apparently have no statistical importance; that the lower right lobe is most often involved, possibly because of diminished motion due to the proximity of the liver; that physical signs vary during both periods of delay and clearing; that diagnosis is by exclusion, especially from emphysema and tuberculosis, and that while danger to life is not great, complete resolution is doubtful and permanent change in the lung may appear in a short time.

The clinical course of pneumonias of the lower lobes of the lungs is notoriously atypical, but none of these variations from the usual course enable us to prognosticate a delay in resolution with any certainty. A constant low leucocyte count is often suggestive of such a termination to the regular course of the disease, while on the other hand I have known a count of 25,000 to be associated with delayed resolution, and in the absence of local pus collections, the temperature never having been normal.

Generally speaking, if the temperature has once reached within one degree of normal, and if this is followed by a leukocyte count of from 12,000 to 18,000 with a switching temperature, we have to deal with a lung or pleural abscess; in those cases, however, where there is neither marked crisis or lysis, but a continuation of all symptoms subjective and objective, with a markedly remittent temperature and sometimes sweats, we may have a fairly high leukocyte count as part of the symptom-complex of delayed resolution. It is usual though to find the count below 10,000 in cases which have exhibited lysis and in which the temperature does not continue to range very high.

The essential nature of the changes which mark the transformation of red hepatization into gray hepatization, and this through purulent infiltration and absorption, and the reasons for the failure of the latter part of this process are not clearly understood. Whether this failure rests in variations in the exudation of leukocytes into the terminal bronchioles and peripheral portions of the alveolar spaces with subsequent granulation of the fibrin nucleus in the center of the alveolar space, or whether it is due to failure of autolytic digestion, or what relation the latter may have to the former processes; these are questions still unsettled.

It is doubtful as to whether the alveolar cells are concerned in the process under discussion. That they have ability to deal with initial infections is maintained by Briscoe, of London, who states that mononuclear cells, whether containing pigment granules or not, are present in the alveoli, and when of sufficient size they are powerful phagocytes. This action is due to opsonins present in the blood serum or attached to injected bodies, and in mild infections these can free the lungs of organisms without the intervention of leukocytes. The latter, however, lend active assistance in violent but not fatal infections. Some phagocytosis occurs even in fatal infections.

According to Ins, Slajansky and Friedlander the alveolar cells may or may not be phagocytic, but the chief phagocytes are leukocytes from the blood-vessels.



Fleiner and others state that the alveolar cells are of two kinds—small nucleated cells and large non-nucleated cells. On the other hand Arnold and Zeigler maintain that the large cells are nucleated and phagocytic. Kölliker, Stricker, Coats, et. al., say that the alveolar cells are nucleated and phagocytic. Ruppert, Fleck, Loehr and Dreschfeld also maintain the presence of phagocytic action in the alveolar cells.

According to Aufrecht, Pratt, Buhl, and others, large round nucleated cells, transitional leukocytes with phagocytic properties, probably derived from the alveoli, are a feature of the first stage of pneumonia. This is followed by stasis in the alveolar vessels (Pratt, Jurgenson), transudation into the alveoli of fibrin and extravasation of blood from the capillaries into the alveoli, the whole constituting red hepatization. The feature of gray hepatization is the filling of the alveoli with round cells which, according to Cohnheim, are from the blood-vessels. The alveolar epithelium is said by Aufrecht to suffer no changes during the stages of red and gray hepatization, remaining always in proximity to the alveolar walls. Pratt has seen polymorphonuclear leukocytes and large leukocytic cells which included red blood corpuscles, lymphocytes, plasma cells and desquamated epithelial cells. He thinks these were derived from the cells lining the alveoli. The color at this stage, generally stated to be due to substitution of white for red corpuscles is said by Pratt to be due to empty capillaries.

The last stage, purulent liquefaction, or resolution, the necessary termination concomitant with gray hepatization, appears to depend on chemical changes which we do not understand. Aufrecht states that it is a granular disintegration of the fibrin that makes liquefaction of the exudate possible. According to Hasse the contact of pus with the fibrin causes the latter to become loose, pale, yellow and of sticky consistency.

From this summary of the views on the alveolar changes in pneumonia it is evident that we are not in a position to define exactly the nature of the factors which determine whether or not in a given instance resolution will occur. We cannot deny the possible influence of phagocytosis by either the alveolar epithelium or leukocytes, nor do we understand in how far the chemic action of the proteolytic enzymes depends on the flooding of the alveoli and terminal bronchioles with leukocytes, but it appears certain that a local massing of leukocytes is a most important feature of the process.

We might mention that Floyd and Lucas, who have treated pneumonia in man with extracts of rabbits' leukocytes and observed no harmful action, "feel that when a case of pneumonia is treated early with extract of leukocytes, and full and frequent doses given when they are required, this may prove of considerable therapeutic value."

The treatment of delayed resolution of pneumonia has remained entirely empirical and, for the most part, unsatisfactory. The use of the various tonics and alteratives internally, while of general benefit, are not accompanied by direct results. Many cases clear up spontaneously

and those which do not are so slow in responding to medicines that we are always concerned about the possibility of permanent crippling of the lung.

McCrae claims that the x-ray is a most hopeful therapeutic measure, but one which must be used with caution and only after a positive diagnosis.

A number of years ago, I was surprised to note the rapid clearing of the lung in a couple of cases of delayed resolution in which I had punctured the lung in two places while searching for a pulmonary abscess which I failed to find. In this connection the following abstract of case histories is of interest:

Woman, aged 26 years; nurse by occupation. Seen in consultation on the fifteenth day of illness. Unresolved pneumonia of left lower lobe. Temperature 101°-101.5° at night. No breath or voice sounds below fourth interspace in anterior axillary line. Lung punctured through sixth interspace in anterior axillary line. No fluid. One week later temperature normal, lung clearing. Two weeks later good respiratory sounds through lower lobe.

Child, female; aged 9 years. Pneumonia early in December, 1899. Seen in consultation on fifteenth of following January. Unresolved pneumonia of left lower lobe. Temperature 102° in afternoon. Sweating at night. No breath or voice sounds in lower anterior part of left lung. Lung punctured through sixth interspace in anterior axillary line. No fluid. Three weeks later child playing out of doors, completely recovered.

The result in these cases led me to think that the puncture of the lung was in some way responsible for the change in the condition of the patients, and I determined to try it in instances where local abscess of the lung or pleura was not the point at issue, of which the following histories are examples:

Young man, aged 19 years. Unresolved pneumonia of lower right lobe; sick sixteen days (March, 1901). Temperature 101° at night. No sweating. No respiratory sounds over portion of lung unresolved. Very slight voice transmission. A few râles in upper portion of lobe. Puncture of lung through seventh interspace, midaxillary line. Six days later temperature normal at night. Two weeks later good respiratory sounds all over lobe.

Man, aged 54 years. Seen in consultation in February, 1907. Sick twenty-two days. Unresolved pneumonia of lower lobe of left lung. Temperature 101° at night. Slight sweats, slight voice transmission, but no respiratory sounds in involved lobe. Puncture of lung through seventh interspace in the posterior axillary line. Gradual improvement began at once. Went to California three weeks later. Three months afterward returned with lung in good condition.

The fact that puncture of the pleural or abdominal cavities will cause a moderate leukocytosis made me think that the effect of the proceeding adopted in these cases on the leukocyte count might be of interest in demonstrating that some reaction follows. The following cases are of interest in this connection:

Man, aged 45 years. Cook County Hospital patient March, 1909. Unresolved pneumonia of lower lobe of right lung. Sick 18 days. Temperature 100°-101° at night. Slight voice transmission, but no breath sounds over lobe affected. A few râles in upper portion of lobe. Leukocyte count 9,000. Puncture of lung; 36 hours later leukocyte count 18,000. Three days later leukocyte count 12,000. Patient much improved, left hospital.

Man, aged 26 years. Hospital patient. Admitted Dec. 22, 1909. Sick seven days before admission. Unresolved pneumonia of lower lobe of left lung. January 8, twenty-eighth day of disease, leukocyte count 8,000. Lung punctured. January 10, leukocyte count 12,800. January 11, leukocyte count 14,000. January 12, pericardial friction rub developed. January 13, leukocyte count 11,500. Resolution practically complete one week after needling of lung.

Man, aged 26 years. Hospital patient. Admitted Nov. 5, 1910. Sick one week before admission. Unresolved pneumonic area about as large as one's hand in upper portion of lower lobe of left lung in midaxillary line. During the third twenty-four-hour period after admission temperature dropped from 104° to 99°, and from then on was, with two exceptions, never above normal. On the fifteenth day, ten days after admission the leukocyte count was 17,600. Lung punctured. Twenty-four hours later, leukocyte count 9,400 (two counts); on the 18th leukocyte count was 11,000. A week after puncture patient left the hospital with lung fully clear.

I show you herewith clinical charts of such portions of the history of these two cases as are of interest in this connection. It might be supposed that in the one case the occurrence of the pericarditis had something to do with the variation in the leukocytes, but I do not think that it in any way modified the history of the case. The pericardial affair was such as is frequently observed during the course of a pneumonia, and disappeared promptly, causing no disturbance while present.

In the case last cited it was the first opportunity I have had of practicing puncture of a small definitely outlined area of non-resolved pneumonia in a patient exhibiting a normal temperature for some days. The prompt drop in the number of leukocytes was a surprise to me, and a result I do not understand.

The puncture is done with an ordinary aspirating needle which is passed into the center of the consolidated area as near as can be determined, to a depth of from two to two and one-half inches. The needle may be withdrawn to the surface of the lung and then inserted in a different direction.

A Western physician told me at a meeting of the A. M. A. several years ago that having read my mention of this proceeding during a discussion on the treatment of pneumonia before the Chicago Medical Society, he had practiced it in two or three instances with marked success.

I would call attention to the fact that Dr. Alexander Hugh Ferguson in his oration in surgery before the Minnesota State Medical Association, 1904, recommended drainage of the lung in pneumonia because of its effect in hastening resolution.

It is not apparent to me that drainage is necessary in cases simply of delayed resolution because I believe that simple puncture will answer. At least, it should be adopted before harsher measures are decided upon.

#### DISCUSSION.

Dr. A. H. Ferguson: I feel that I must discuss this paper myself, if you will permit. Puncture of chronically inflamed tissue to hasten absorption is a surgical procedure that has been known from time immemorial. Incisions of the hands, of the feet and different parts of the body where there was delayed resolution has (we may almost say) always been done. I think the idea was orig-



inally to give the capillaries a chance to get in their work, on the one hand, and to produce drainage on the other. Through this process the lymphatics came into play and the thing subsided.

Mistakes have been made, as you know, which have resulted most advantageously to the patient. That was the way I introduced this procedure once. In a mistaken diagnosis, in consultation with six, I proceeded to operate on a supposed empyema of the right lung. After I had removed a rib we found no pus in the pleural cavity. Then we thought there might be an abscess, and in poking around to find it (and we did not find it) I made several punctures. The patient began to get well almost immediately. I heartily recommend the proceeding.

Dr. Joseph M. Patton:—There having been so little discussion, there is little that I can add to the paper, because we do not know enough about the nature of the change in a consolidated portion of the lung to tell what is taking place. If we know how much of this process was a chemical one and how much a physical one, depending on the cells and their phagocytic ability, we might discuss this, but we do not know enough about that to say why it does not resolve as it should and why it resolves when it is irritated.

It is evident, at any rate, that the leukocytes have a little to do with it, but whether resolution is checked by the physical relation of the consolidated portion of the lung or whether it is because the phagocytic properties of the cells are interfered with, we cannot say. In the last case cited it is evident that anatomic relations of the consolidated portion had nothing to do with the failure of resolution.

In some cases cited we might take it as a coincidence—the time that the procedure was taken up and the recovery of the lung, but in the last case it cannot be called so. There was a man who had had a crisis, had gone a week without temperature, had a well-defined area of consolidation about as big as one's hand which had remained in that condition for a week or ten days with no sign of improvement; immediately on being punctured it cleared up. In view of this, in properly selected cases, at a proper time it seems to me that it affords us an opportunity to prevent many of the chronic conditions of the lung which remain after pneumonia.

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## THE DIAGNOSIS OF RENAL AND URETERAL CALCULI \*

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The cystoscope, the urethral catheter and the x-ray have revolutionized our ability to recognize surgical lesions of the kidney. Although the use of these methods of diagnosis requires special training and constant practice in order to maintain a sufficient degree of accuracy, the general practitioner can no longer afford to be ignorant of the great progress which has been made as the result of their routine use in the diagnosis and treatment of surgical conditions of the urinary organs.

One can no longer rely on clinical signs alone in this field of surgery. It is only through a careful analysis of the symptoms, physical findings and the use of the above methods that we can hope to advance. In no class of cases is one more apt to find surprises, often unpleasant ones, than in this one.

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\* Read before the McDonough County Medical Society, Jan. 3, 1911.

The early history of the development of gall-bladder surgery showed the impression to be quite general that every case of gall-stones must show one or both of two cardinal symptoms, viz., colic and jaundice, before a diagnosis sufficient to justify operation could be made.

Unfortunately, the impression still exists in the minds of many that a diagnosis of renal or ureteral calculi cannot be made unless colics or hematuria have been present at some period in the clinical history. That these and similar views are wrong is the daily experience of those who operate on kidney cases. Symptoms which point directly to the kidney or ureter as the seat of mischief are so often absent that it is a common occurrence to see cases showing persistent temperature, pus in the urine in large quantities, progressive emaciation or even anuria treated for other conditions than those of surgical lesions of the kidneys. A patient with chills, fever and sweats, or one suffering with symptoms of severe septic intoxication may be treated for days or weeks for malaria, malignant endocarditis, typhoid and even cryptogenetic septicemia, because the localizing signs pointing to the kidney were either slight or, as is more frequently the case, the urinary organs were not thought of as the possible source of the symptoms.

The object of the present paper is to call attention to the necessity of making an early diagnosis in one class of kidney and ureteral cases, viz., those in which calculi are present. As was previously stated, this is not a subject which concerns the surgeon alone, but is of equal importance to the general practitioner, who is usually the first to see these cases.

As our experience increases, we are forced to the conclusion that there are no pathognomonic signs of renal or ureteral calculi. Although the majority of surgeons are as yet unwilling to accept the dictum of Kümmell, "no shadow, no stone," it must be acknowledged that this is true in about 99 per cent. of the cases. In a recent report of 245 operations for renal and ureteral calculi, Israel<sup>1</sup> reported only three cases in which there had been a positive shadow, but no stone found.

A positive skiagraph taken by one familiar with the special technic requisite to the taking of such pictures is at the present time the only absolute test of the presence of a renal or ureteral calculus. Few surgeons would be willing to undertake an operation on the strength of a negative skiagraph.

I will briefly review some of the rules to be observed in order to obtain trustworthy pictures.<sup>2</sup> The patient must be thoroughly purged and allowed to drink only clear fluids for twelve hours before taking a picture. The latter is best made with the compression apparatus of Albers-Schönberg. Two views should be taken, the first to include both kidneys and the upper part of the ureters (as shown in Figure 4), and the second to include the lower portion of the ureters and the bladder. It is absolutely necessary to include both kidneys and both ureters in the

1. Neuhauser *Folia Urologica*, vol. iv.

2. A more detailed description can be found in two previous articles in *Southern Medical Journal*, February, 1909, and *Surgery, Gynecology and Obstetrics*, April, 1910.

pictures, because the calculi are more frequently present on both sides than was formerly suspected.

A skiagraph, to be considered perfect, must show the last two ribs, the transverse processes of the last dorsal and all of the lumbar vertebrae and the outlines of the psoas muscle.

Skiagraphy shows us whether (a) calculi are present on one or both sides (Figure 4); (b) the number and shape of the calculi (Figure 3); (c) their location (whether in the parenchyma or in pyo- or hydronephrotic cavities, or in the ureter, or in the bladder [Figure 5]).\*

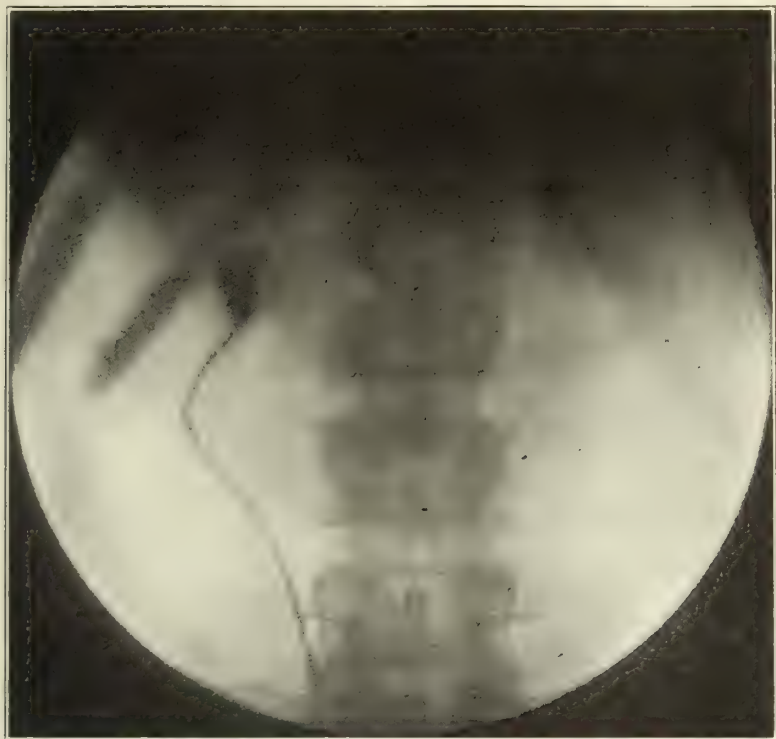


Fig. 1.—Calculus lying in pelvis of kidney. Wire bougie passed into pelvis alongside calculus.

The shadows of suspected renal calculi must be differentiated from scybala in the intestines, from infarcts in the kidney, from tuberculous foci, from calcareous mesenteric glands, and from centers of ossification in the ribs. The shadows of ureteral calculi must be distinguished from foci of ossification in the pelvic ligaments, from phleboliths and calcified glands. If the patient has been carefully prepared, the chances of error in interpreting a renal skiagraph are very slight. In the case of suspicious shadows in the line of the ureter, one can in cases of doubt take another picture with a bougie of fine fuse wire inserted into a ureteral catheter.

\* I am indebted to Drs. L. E. Schmidt, D. F. McNash and Arna Braunwarth for permission to reproduce three of the radiographs accompanying this article.



If stone shadows are present, the skiagraph shows whether or not the kidney is in its normal position. If one wishes to be absolutely certain of its location, it is best to inject a solution of some silver salt like ten per cent. protargol or fifty per cent. cargentos through a ureteral catheter or insert a wire into the ureter, as described, and take another picture. Both of these methods yield such deep shadows of the renal pelvis and of the ureter that the former method (injection of silver solutions) is not only useful in showing the location of the kidney, but gives one a good idea as to the amount of dilatation of the renal pelvis.

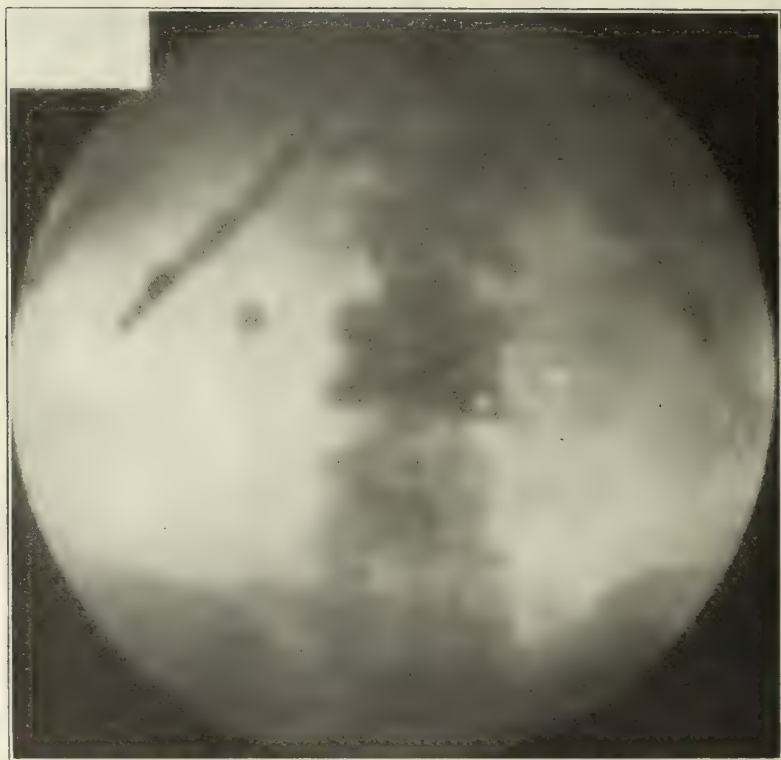


Fig. 2.—Calculus lying at junction of pelvis of kidney and ureter, and a second calculus showing shadow behind a long twelfth rib.

The reason why I have mentioned the skiagraph first is that it is in nearly every case the *court of last resort* in the diagnosis of renal and ureteral calculi. As was stated above, one must not, however, forget that the general practitioner does not have the advantage of such special methods. He must depend to a great extent on the history, the symptoms and ordinary methods of clinical diagnosis. He should, however, be able to draw the conclusion in the majority of cases, first, that the urinary tract is the seat of the trouble; second, that he can exclude one by one the various diseases of these organs and arrive at a fairly accurate diagnosis of calculi as the source of the kidney trouble.

My own observations on a relatively large number of kidney and ureter cases of all kinds have taught me that the presence of calculi does not always result in the same clinical picture. I will tabulate the various clinical forms and then quote personal cases to illustrate the chief varieties. There are in general seven classes.

1. Those in which there is a history of one or more renal colics.
2. Those in which fever of obscure origin is the chief symptom.
3. Dull lumbar pain is the only symptom.
4. The continued presence of pus or of blood in the urine attracts the attention of the physician or patient.

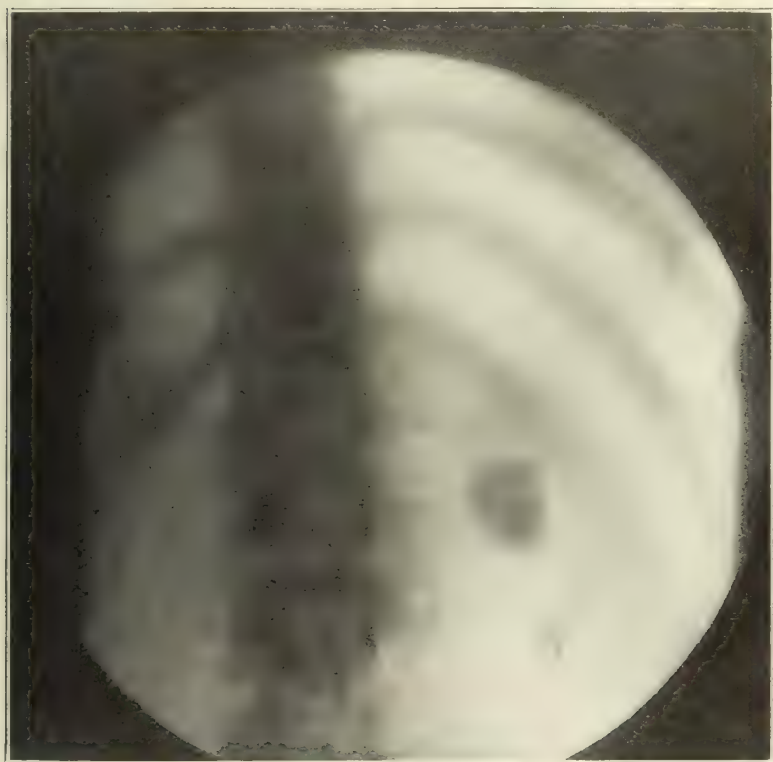


Fig. 3.—Multiple calculi lying in hydronephrotic cavities in a case of bilateral calculi.

5. Those cases in which the sudden onset of anuria is the first sign.
6. Latent cases. The presence of calculi is only discovered during other kidney or ureteral operations.
7. Mixed cases. Those in which calculi accompany tuberculosis or neoplasms of the kidney.

I will take these up a little more in detail.

#### CLASS 1.

*Renal colic is the most prominent symptom and the chief one for which the physician is called or consulted.*

M. C., referred by Dr. M. C. Hecht, of Wilmette, with the diagnosis of renal calculi. Female, aged 48 years; history up to one year ago negative. Since that time three attacks of typical ureteral colic. During the first two attacks pain well localized over left kidney, so severe as to require opiates, and radiating around toward umbilicus and toward bladder and groin. Blood found microscopically during attacks, but disappeared in intervals. Very stout person, but *x-ray* showed distinct small round shadow at level of transverse process of second lumbar vertebra. Diagnosis of calculus in upper part of ureter confirmed at operation. Ureter incised over impacted calculus, just below renal pelvis, and uric acid calculus the size of a bean removed.

The urine being clear, the ureteral incision was closed with catgut.

*Remarks.*—This was a case with typical colics, showing the characteristic severity and radiation of pain, and accompanied by hematuria.

In a normally located kidney, a stone shadow (Fig. 2) lying opposite the transverse process of the first lumbar vertebra means that the

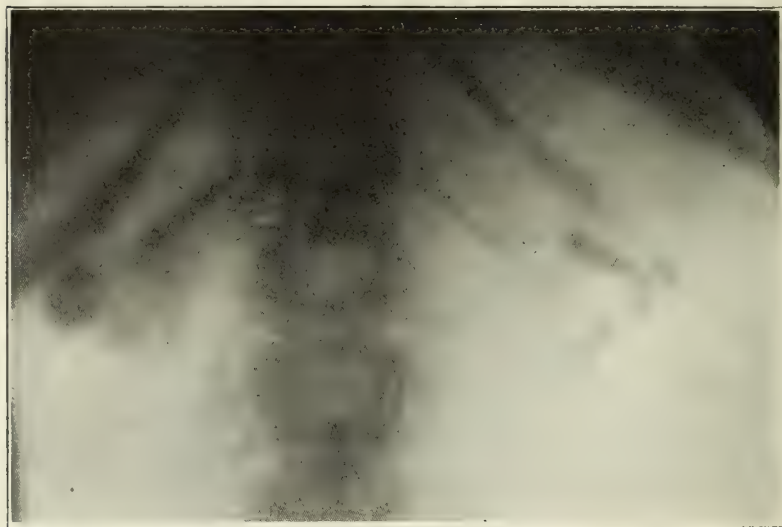


Fig. 4.—Bilateral renal calculi. On the left side a long, pencil-like calculus projects into ureter.

stone is located just at the outlet of the renal pelvis, and can be best removed through an incision (pyelotomy) into the posterior avascular aspect of the pelvis, a method of operation which is easier and far less apt to be accompanied or followed by bleeding than the older method of extraction through an incision through the convexity of the kidney (nephrotomy). When the shadow is lower down, as in this case, the calculus lies in the upper part of the ureter. It is best to drain the ureteral incision when the urine contains pus; if it is clear, the ureter can be safely closed with catgut.

It would be necessary in a case of this class to distinguish between (a) colics due to other renal conditions, such as kinking of the ureter due to floating kidney (Dittl's crises), ureteral crises due to tabes and ureteral colic accompanying some forms of nephritis, or colics due to



the passage of clots in tumors, or of pus plugs in tuberculosis, and (b) from colicky pain due to extrarenal or ureteral conditions, such as appendicitis, gall-stones, lumbago.

*Differentiation from other Renal Conditions.*—In movable kidney, the differential diagnosis is very difficult during the attack unless a tumor due to the temporary obstruction of the urine is found during the attack, and is absent in the interval (intermittent hydronephrosis). There is usually scanty urine during and polyuria after the attack.

Visceral ureteral crises due to tabes must always be thought of in middle-aged patients. The negative urinary findings and the discovery of symptoms of tabes will readily exclude the condition.



Fig. 5.—Two calculi lying in pelvic portion of ureter.

Colics due to nephritis are accompanied by other urinary and general evidences of the condition. Colics due to tumors of the kidney are accompanied by the passage of blood in much larger quantity than in the case of renal calculi.

*Differentiation from Extrarenal Conditions.*—In appendicitis there is more localized rigidity, but little radiation of pain, and the pain is not, as a rule, quite so severe. In some cases, where the appendix lies in close proximity to the ureter, there may be blood in the urine during

the attack. This has been termed appendiceal hematuria. In other cases the two conditions may coexist. In every doubtful case of appendicitis it is best to take a skiagraph. In one of my cases the *x*-ray was negative at the time of operation for acute appendicitis, but the patient passed a calculus later.

*Gall-Stones.*—The right hypochondriac location of the pain and its radiation to the shoulders is quite characteristic, but in cases where the gall-bladder lies lower, the differentiation without the use of the *x*-ray may be difficult. Fortunately, only about ten per cent. of gall-stones



Fig. 6.—Calculus lying at junction of renal pelvis and ureter in a low-lying kidney.

show a shadow, and even this when present is not located where a renal calculus of its size would be and could be easily differentiated by the use of the lead bougie. In closing, it must not be forgotten that pain due to renal calculus may occasionally be referred to the opposite side.

*CLASS 2.—Fever of Obscure Origin the Chief Symptom.*

J. K., aged 50 years, consulted the writer on account of a post-operative hernia following operation for appendicitis one year before, in another state. Tempera-

ture 102 F. History of repeated chills and fever for past six months. No evidence of local or right-sided subphrenic abscess. Attention directed to kidney as source of fever, on account of history of passage of calculus fifteen years before. Urine contained large amount of pus. Cystoscopy negative. X-ray showed two stone shadows, one high up in left ureter, the other in renal pelvis. Operation showed former tightly wedged in upper part of ureter, almost completely obstructing urinary flow, and thus favoring ascending infection.

*Remarks.*—This shows the necessity of remembering the kidney as the seat of origin of obscure fever when other sources of temperature have been excluded. A calculus lying in the ureter or at the outlet of the pelvis may do no harm until it begins to obstruct the flow of urine.

If the urine remains aseptic, there is resultant dilatation of the ureter or of the renal pelvis, until there is complete pressure atrophy of the renal parenchymata (hydronephrosis). I will enumerate, in connection with this case, the chief pathologic changes which may be the sequel of stone in the kidney or ureter.

In the aseptic calculous kidney the possible pathological changes are: (a) A contracted kidney, due to the production of connective tissue between the tubules; (b) a variable degree of hydro- or, more properly speaking, uronephrosis. As a rule, this second sequel is of minor degree unless the ureteral orifice is almost completely blocked.

In the infected, i. e., septic calculous kidney the possible sequelae are (a) pyelitis, which is in reality seldom confined to the pelvis alone, but extends upward along the tubules and involves the parenchyma. (b) A pyelonephritis, in which the parenchyma may be simply the seat of an extensive leukocytic infiltration, or the infection is more active and causes the formation of multiple miliary and larger abscesses scattered through the medulla and cortex. The macroscopic appearance of such kidneys, with their groups of little abscesses scattered over the cortex, is quite typical. (c) A pyonephrosis. This is an advanced stage of the condition described as pyelonephritis, and is the result of the disintegration of the parenchyma, with the formation of large cavities separated by septa and containing pus and calculi. If the ureter is blocked the entire kidney is converted into a sac containing pus and calculi. (d) An infected hydronephrosis. In this an aseptic hydro- or uro-nephrotic calculous kidney becomes infected and the dilated pelvis or calyces, instead of containing urine alone, contain both urine and pus, there being sufficient parenchyma left to continue the excretion of a fair amount of urine. (e) The various forms of paranephritic complications of an infected calculous kidney. Here we may have either a paranephritic abscess or the production of granulation, and later of scar tissue around the kidney. Finally, we may have (f) a part or the entire kidney parenchyma replaced by fat, whose origin is probably in the capsular fat. An instance of such a sequel of infected stone kidneys has been reported<sup>3</sup> by the writer.

Fever, as we can readily see from these possible effects of calculi in the kidney or ureter, can predominate the clinical picture. This is espe-



cially true in those patients who either give a negative or indefinite history, as to colics, etc. It has become my routine practice to consider the kidney as one of the first organs to be excluded as the possible source of an obscure temperature.

### CLASS 3.—*Dull Lumbar or Iliac Pain.*

Quite a number of cases present themselves on account of a dull aching pain referred, in the case of renal calculi, to either lumbar region. In the case of ureteral calculi, the pain is often quite constant at some point in the course of the ureter. Cases of the latter class are often wrongly diagnosed as being chronic appendicitis, unless ureteral calculi are thought of.

Eric H. Case of bilateral calculi. Bilateral nephrolithotomy. For preceding five years this patient had a dull aching pain lasting several hours daily, sometimes over the right kidney, sometimes over the left kidney. Up to one year before my examination the pain had been chiefly in the right side, but during the past year the pain had been altogether in the left side. There was very seldom any radiation of the pain. During the first four years the urine was always cloudy. He had had several attacks of chills and fever. The *x*-ray showed (Fig. 2) the presence of calculi in both kidneys, which were removed at separate sittings.

*Remarks.*—This case illustrates how calculi can only give rise to a dull aching pain and yet both kidneys be the seat of one or more calculi. It also shows the necessity of taking pictures of both kidneys, both ureters and the bladder in every case of suspected calculi. It is beyond the province of this paper to discuss the question as to whether only one or both kidneys should be operated on at one sitting. Experience has taught that it is best to remove the calculi from the two kidneys at separate sittings. In the case just cited the kidneys both showed advanced suppurative changes. Ordinarily it is best to remove a kidney whose functioning power is practically lost.

### CLASS 4.—*Continued Pyuria or Hematuria.*

Some cases of calculi in the kidney and ureter show pus and blood in varying amount as the only clinical sign. These form only a small proportion of all of the cases of renal calculi. Ordinarily the persistent presence of a pyuria, if one can exclude the urethra and bladder as the source of the pus, should lead to our looking for one or more of the following conditions: Tuberculosis of the kidney, non-tuberculous pyonephrosis and nephrolithiasis. The *x*-ray will quickly exclude the last-named, the absence of tubercle bacilli in the urine will exclude tuberculosis. The persistent presence of blood in the urine should lead to the suspicion of (a) tumor of the renal pelvis or kidney itself; (b) calculi; (c) chronic nephritis.

S. H., aged 50 years, had history of persistent hematuria for ten years. Urine contained many red blood cells, a trace of albumin, and a few hyaline casts. Diagnosis of chronic interstitial nephritis made. No pain during first six years of hematuria. Sudden attack of typical right-sided renal colic with passage of small calculus. Urine soon became turbid and contained large number of pus

cells. During five years' period of pyuria no further attacks of pain. He had occasional slight chills, but no fever. Skiagraph taken eleven years after onset of illness showed left kidney full of large phosphatic calculi which were subsequently removed.

*Remarks.*—This case confirms the necessity of bearing in mind the possible presence of calculi when there is persistent pyuria or hematuria which cannot be otherwise accounted for.

#### CLASS 5.—*Calculus Anuria.*

In this class the first symptom of the presence of calculi is often the sudden onset of complete anuria. Such a condition may be due (a) to the presence of calculi blocking both ureters, and this is the most frequent cause, or (b) to the complete obstruction of one ureter by a calculus and a reflex inhibition of the secretory function of the opposite kidney.

M. N., aged 30 years, was admitted to my service in the Michael Reese hospital with marked delirium, high temperature (106 F.) and rapid pulse. Bladder found empty on catheterization during first twenty-four hours. Condition so grave that no operative interference was attempted. Death twenty-four hours after admission. Autopsy showed a calculus blocking right ureter, with secondary septic pyelonephritis and a hypoplasia of the opposite kidney.

*Remarks.*—This patient never had any attacks of pain. He had been treated for nephritis for preceding five years. Sudden onset of anuria due to complete obstruction of the only kidney which still possessed any secretory power.

#### CLASS 6.—LATENT CASES.

These form a very small percentage of the entire number. As a rule, the presence of calculi manifests itself under one of the five clinical pictures just described.

#### CLASS 7.—MIXED CASES.

In this class the formation of calculi is usually secondary to the presence of a renal tuberculosis, or of a renal neoplasm. As a rule, the symptoms of the primary lesions overshadow those due to the calculi.

## BRONCHOSCOPY AND ESOPHAGOSCOPY

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CHICAGO

Tracheo-bronchoscopy is defined by Jackson as the inspection of the interior of the trachea and bronchi with the aid of tubes which serve as specula, bringing into view successively the various passages, by pushing aside structures that would obstruct the view, or dragging the passages into a new position where they will be in the direct line of vision. Similarly by esophagoscopy is meant the inspection of the interior of the esophagus with the aid of long tubes which serve as specula.

To Gustav Killian of Freiburg is given the credit for devising the technique and showing the practicability of bronchoscopy. His first

publication appeared in 1897, but it is only in the last five or six years that the operation has obtained the universal recognition that it deserves. As in other operations, the more extensively they are practiced the greater are the additions and modifications of the instruments employed according to the ideas of the operator and the necessities of individual cases. In addition to the original tubes of Killian we now have Jackson's tubes which contain on one side a canal for the passage of a metal carrier to which is attached a small lamp and on the other side another canal to which an aspirator pump may be attached for removing secretion. Bruning has devised an extension tube by means of which smaller tubes may be passed through the tube already in place, thus saving time and increasing convenience. Many instruments have been devised for facilitating the work; the sliding spatula of Jackson, the spatula of Ingals for aiding in the introduction of the tubes; the pin-finder of Ingals; the safety-pin closer of Jackson-Mosher; extension forceps of Bruning and numerous others. The sources of illumination are a most vital and necessary part for successful work. Those usually employed are the Kirstein lamp, the small cold electric lamp attached to a carrier or the later Bruning lamp, essentially a Kirstein attached to the tube handle. Either dry or storage batteries or the ordinary electric current may be used provided rheostats are attached to control the current, eliminating the inconvenience of burned-out lights and guarding against shocks to the patient or operator.

The operation of bronchoscopy is divided into two methods: upper bronchoscopy and lower bronchoscopy. The former consists in the introduction of tubes through the natural passages; the latter through a tracheal opening. The latter is easier of performance, but it must not be forgotten that the tracheal wound is an added element of danger to the patient. In the matter of a selection of operation, the upper method is to be preferred provided the condition of the patient permits and, in the cases of foreign bodies, the latter are such that they can be removed without causing too much injury to the trachea and larynx.

The indications for the operation may be broadly summarized as the removal of foreign bodies from the air passages or esophagus and as an aid in the diagnosis and treatment of various conditions in these regions.

The diagnosis of the presence of a foreign body is usually made from the history of aspirating or swallowing some substance, dyspnea coming on suddenly, cough, pain, difficult deglutition, etc. In case a bronchus is obstructed, the physical findings may be quite an aid. The skiagraph is of great value, but unfortunately it does not always reveal the presence of seeds, kernels and shells of nuts.

The operation may be done under local or general anesthesia. Unless one has had a large experience or possesses great skill the latter seems preferable. If general anesthesia is employed ether, preceded by morphin and atropin, is generally considered safer. However, the excess of secretion produced by ether may become a serious handicap to the successful performance of the operation. In that case, one has to rely upon the various aspirating appliances or upon the swab and perhaps



continue the anesthesia with chloroform. Asepsis, sterilization of instruments and the preparation of the patient should be carried out as in other operations. The position of the patient may be either the sitting or recumbent if local anesthesia is used and preferably the re-



Figure 1

cumbent if under general anesthesia. In the latter the head must be drawn clear of the table, placed in extension, and held rigidly by the assistant. The proper holding of the head is one of the important elements necessary to success and an extended description of the method may be found in Jackson's book on Bronchoscopy and Esophagoscopy.

The dangers of the operation must be taken into consideration. These may arise from the anesthetic, from trauma caused by instruments, broncho-pneumonia, emphysema, pneumo- and pyothorax, and sepsis.

Several years ago I reported to the Chicago Laryngological Society the case of a girl, aged 12 years, with an eyelet imbedded in a mass of granulation tissue springing from the left false cord (Fig. 2, *a*) (*Jour. A. M. A.*, Jan. 4, 1908). This had caused aphonia extending over a period of two and a half years. Only a very small portion of the eyelet was visible on laryngoscopic examination, its nature, however, being satisfactorily disclosed by the skiagraph. Attempts at removal through a tube were unsuccessful, the mass of granulation tissue being forced downward by the end of the tube. I finally succeeded by the indirect method, first cutting into the granulation tissue on either side with a laryngeal cutting forceps, thus loosening the eyelet and then removing it with an ordinary forceps. In retrospect I may say that had a small direct speculum been used instead of a tube, it probably would have been a less difficult matter to remove the eyelet. To this case I wish to add five others that have come under my observation; one of a foreign body in the right bronchus; one partly in the larynx and partly in the esophagus; the others of foreign bodies in the esophagus.

Case 2. F. Z., aged 7 years, was admitted to the service of Dr. Joseph Beck at the Cook County Hospital, but on account of his absence came under my care. One week before admission the patient, a boy, aspirated a stick-pin with supposedly a jewel setting for a head. He suffered no discomfort for five days and was apparently in good health until two days previous to his admission. He then began to complain of pain in the right side of the chest which was more pronounced on coughing. He began to have temperature and felt quite ill. His temperature on admission was 104.2° F. From the physical findings I first suspected pneumonia and kept the child under observation for a few days. However, from subsequent examinations made by Dr. Tice, Dr. Krudinier and myself, the diagnosis was changed to that of a probable collapse of the lung. The physical findings were limited to the lower lobe of the right lung. These were retraction and decreased expansion, decreased tactile fremitus, and dullness giving a sharp line of demarcation from the middle and upper lobes. On auscultation the breath sounds were indistinct and distant, vocal fremitus was decreased, and there were no râles present. The child ran a distinctly septic type of temperature varying from normal on one occasion to 104.2° F. The skiagraph showed the pin in the right main bronchus below the bifurcation with the point projecting upwards. (Fig. 1.) Operation was delayed for over a week after his admission with the hope that his general condition would improve. With the exception of considerable less pain there was no improvement. He was given ether and with the assistance of Drs. Krudinier and Van Pelt, upper bronchoscopy was done. About one-half inch below the bifurcation the point of the pin was found imbedded in granulation tissue. This rubbed off easily on passing the tube over it. The point of the pin was grasped and the pin removed through the tube. Immediately, pus could be seen welling out of the secondary bronchus in considerable amount. The child began to cough so violently that I was forced to take out the tube. The head of the pin could not be found and as there was doubt of its nature, it being a cheap prize-package affair, I decided to postpone any further search for the time being. A skiagraph taken the next day failed to show anything. The patient was kept in the hospital for two weeks. The temperature after a couple of days came down to just a little above normal. Air was found

to be entering the lung and at the time of his discharge, with the exception of a slight relative dullness the physical findings compared very favorably with those of the opposite side. The leukocyte count of 17,400 before the operation had dropped to 7,200 six days after the operation. Subsequent to the operation the

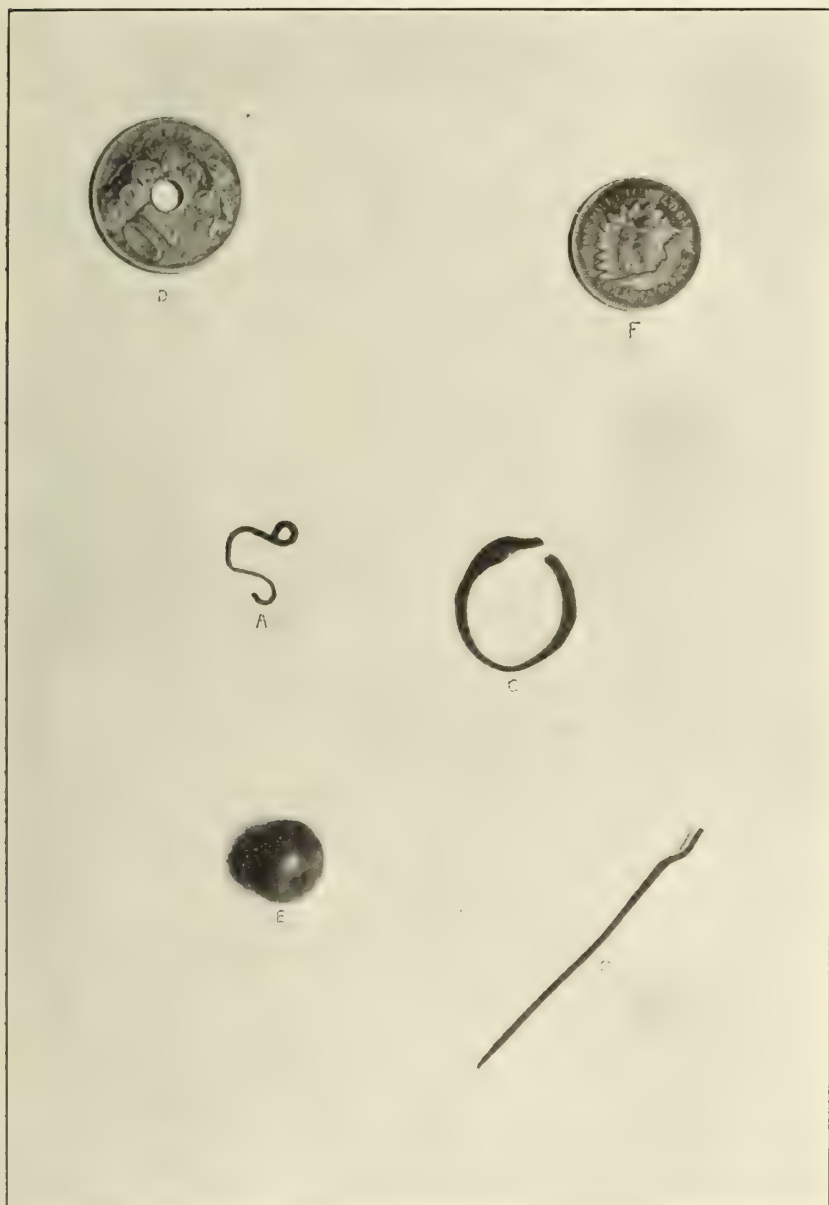


Figure 2.

child's parents stated that they thought that the head of the pin was composed of some soluble substance. However, I am inclined to the belief that it was forced out by the violent coughing attack which came on immediately after the shaft of the pin was removed. The shaft was 4.8 cm. in length (Fig. 2b).



Case 3. B. K., aged 10 months, was admitted to the hospital on the statement of his mother that she thought he had swallowed some foreign body. He had some difficulty in swallowing although this was never very great. The skiagraph did not appear to give a definite picture of a foreign body but as subsequent events proved this was due to an improper interpretation owing to its position and character. The temperature was irregular varying from 98° to 101° F. On account of the history, the slight difficulty in swallowing, and the temperature, it was deemed advisable to make an examination. The child was given a minimum amount of ether, just enough to cause relaxation. The small direct speculum of Ingals was introduced and the foreign body was seen hooked over the left arytenoid, the greater part of it projecting downward and backward through the mouth of the esophagus. On removal it was found to be a small broken ring (Fig. 2c). The interesting features of this case were the slight symptoms caused by the presence of the ring and its arrest in its downward course by becoming hooked over the arytenoid. The child was kept in the hospital for a few days for observation. The temperature subsided rapidly and there was no further trouble.

Case 4. G. D., age 2 years, three days previously had swallowed a Belgian 10 centime piece (Fig. 2d). A number of attempts, instrumentally and otherwise, had been made to remove the coin but to no avail. The temperature on admission was 100° F. At times it went up as high as 102.2° F. The child assumed a position with its face downwards. Considerable blood and mucus came from the mouth. It was very restless and particularly noticeable were the efforts it made to cause vomiting or to reach the coin by thrusting its whole hand as far as it could into the throat. Fluids were regurgitated and each attempt at taking nourishment was followed by severe attacks of coughing. The skiagraph showed the coin with its lower edge about the level of the right sternoclavicular articulation. Under ether anesthesia the following day I attempted its removal. There was considerable evidence of traumatism in the region of the mouth of the esophagus. The esophagoscope was introduced but I was unable to locate the coin. There appeared to me to be considerable edema of the esophageal wall above and in the region where the picture showed the coin to be. I tried to uncover it by using the end of the tube and by the use of various probes but could not succeed. After working for almost 30 minutes, I desisted because I did not think it wise to prolong the anesthetic. At my request, Dr. Ingals kindly consented to undertake the removal of the coin and about six days later the second operation was performed. There was no particular difficulty in passing the tube but as in the first attempt the coin could not be uncovered. However, he finally succeeded in introducing an 8 inch forceps and with this the coin was found and removed. The child gradually failed after the operation and died in about three days. As no post-mortem was obtained, the exact cause of death could not be determined.

Case 5. Female, aged 5 years. Five days previous to admission to the hospital the child had swallowed a marble about 11 mm. in diameter (Fig. 2e). Since that time she had been unable to take any solid food. Her condition was poor and she had a temperature of 101° F. Under ether anesthesia the next day, the marble was removed. Considerable difficulty was encountered in removing it because each time the marble was grasped and drawn upwards the forceps would slip off and the marble would be propelled to the cardiac end of the esophagus. This happened four or five times before the marble was finally secured. Of interest in this case was the fact that the marble, comparatively a small body, was not forced into the stomach by the normal contractive powers of the esophagus. The patient was discharged on the next day with temperature practically normal and in good general condition.

Case 6 (Fig. 2f). E. H., a little girl 1 year of age, was given a penny to play with the day before she came under my care. Subsequently her mother noticed that she regurgitated the milk given her to drink. The skiagraph showed the coin in the upper part of the esophagus. I passed a tube but was unable to see the

penny. Under ether anesthesia the next day I introduced the direct speculum holding the mouth of the esophagus open with its tip. The upper edge of the penny could be seen below about one-half inch from the end of the speculum. It was removed with forceps and the child made an uneventful recovery. My experience with this case emphasized the fact that it is extremely easy to pass a tube to the side of a comparatively large foreign body in the esophagus without seeing it.

In the after treatment of these cases I have adopted the suggestion made by Dr. Ingals of placing the child in a croup tent for from 24 to 48 hours or longer if necessary. By this procedure I believe that the chances of the child being affected by pneumonia are considerably lessened. A point I wish to emphasize is the danger of electric shock especially when the street current is used for illumination. In my last case after removing the penny and while still holding it in the forceps, it came in contact with some other metal with the result that it was somewhat scorched and I received an amount of electricity that was decidedly uncomfortable.

34 Washington Street.

#### DISCUSSION

Dr. E. Fletcher Ingals, in discussion, stated that this operation is not entirely without danger. At the International Medical Congress at Budapest, Von Eichen, in analyzing 303 cases of bronchoscopy, found a mortality of 13 per cent. These cases collected from the world's literature did not represent the actual mortality because many fatal cases are not reported. Jackson places the mortality at about 3 per cent., but he omitted certain cases which, if included, would make the mortality 9 per cent. The value of the operation is recognized, but it is important that every means to prevent its dangers should be found. The principal sources of danger are the anesthetic, bronchopneumonia, emphysema, dilatation of the heart, traumatism and sepsis.

Anesthetics: cocaine in small quantities properly guarded would do no harm, but the use of larger quantities which may seem desirable to produce anesthesia in the larynx and the bronchi may be exceedingly dangerous, especially in children. Dr. Ingals used chloroform in a considerable number of cases, but now uses ether altogether. This anesthetic also is dangerous when continued for a long time, since it is more likely to cause bronchopneumonia than is chloroform. Dr. Ingals has adopted the plan of giving a full dose of atropin four hours before operation and a second full dose of atropin with a medium dose of morphin one hour before operation to prevent excessive secretions.

Dyspnea adds much to the danger and when severe it is rarely safe to attempt upper bronchoscopy. In any case the operator should be ready to do rapid tracheotomy. In cases of marked dyspnea tracheotomy should be performed first. Intubation may relieve postoperative dyspnea caused by irritation of the larynx.

Bronchopneumonia may be due to either the ether or mechanical irritation. Exposure afterward may also cause it. As means of prevention he urged that the operation should not be prolonged, that it should be as gentle as possible; that tubes which stretched the bronchi should not be used, and that the child be placed in a croup tent for forty-eight hours afterward, keeping it very warm and moist. The temperature should be 85 F. He advised after bronchoscopy the administration of liquor ammonii acetatis, 2 drams every four hours for a child 6 years old.

He referred to a case that he had heard reported where the child died of a rupture of the bronchus, which was probably due to the use of a large bronchoscope. In another case death occurred from hemorrhage. Traumatism may also occur from an instrument with a sharp edge, such as forceps with teeth or any

instrument that might catch the mucous membrane. Formerly he used aspiration to remove the mucus. He now relies on swabbing with sterile gauze in order not to injure the mucous membrane. In one operation two cotton swabs came off in the lung. Since then he uses a small piece of gauze attached to a long linen string.

The danger from sepsis he believes comes largely from introducing the bronchoscope into the esophagus before or during bronchoscopy.

Among things that had aided him much in his work were an old-curved esophagus forceps, which is easily manipulated and which is often effective in removing foreign bodies and especially coins; also an 8-inch artery forceps when the object is in the esophagus above the sternal notch. He had found his open tube spatula with the handle set at an acute angle, about 40 degrees, very helpful in introducing the bronchoscope, and a steel tube director over which the bronchoscope might be passed through the glottis was often very valuable. He always began the operation prepared to use either the internal or reflected light, or both, and generally used both before the operation was over.

Dr. W. E. Casselberry emphasized the importance of a complete rehearsal just before operating on a case in which every bit of apparatus is tested and all of the manipulations gone through on a manikin supported in the position of the patient. This rehearsal is valuable in testing the lights which so often fail when they are introduced into the bottom of the tube. Such a rehearsal will shorten very much the time of the operation. Dr. Casselberry is now using a Kierstein light in addition to the distal light. The distal light illuminates the immediate field, but does not project the light ahead; this is accomplished with the Kierstein headlight. The rheostat and street current are used for the headlight, a pocket battery for the distal lamp. To carry out this plan of illumination he has had the Jackson tube made funnel shaped at the top more like the Killian tube.

The pin cutter referred to was devised by Dr. Casselberry to meet a necessity. It cuts the pin, at the same time preventing the two ends from flying asunder.

Dr. J. C. Beck called attention to the fact that false shadows in the skiagrams are caused by the bronchial tree and calcified bronchial glands. It is important to interpret the skiagram correctly. The only way this can be done is to make stereoradiographs. This removes false shadows and avoids distorted shadows.

He did not agree with Dr. Ingals that it was always easier to pass the bronchoscope into the esophagus than into the larynx. In one of his cases the difficulty lay in not passing the tube into the larynx when he desired to enter the esophagus. He finally succeeded in doing this by not throwing the head of the patient back as far as is usually done.

He desired to place this case on record, the history of which is as follows: Boy, 5½ years old, while playing with a quarter, placed it in his mouth and swallowed it. A few moments later the mother noticed the boy having some difficulty and called the physician who suspected that the coin had lodged in the throat, but on failing to find it by the ordinary examination, he sent the case to the Cook County Hospital, where it came under the care of Dr. Beck. A radiogram was taken and located a shadow much larger than a quarter, about on a line with the sternal notch. This being late in the evening and the boy being able to swallow milk with little difficulty, it was decided to wait until the following day for operation. Just before operating another radiogram was taken and this showed the shadow of the coin in the same position. The patient was placed under a general anesthetic (ether), and by the aid of the Bruening esophagoscope an attempt was made to remove the coin. As said above, considerable difficulty was encountered in the introduction of the esophagoscope, for there was a constant slipping of the end of the tube into the larynx. By not allowing the head to be retracted as much as is the custom, Dr. Beck was able to pass the tube into the esophagus, but with the disappointment that at the point back of the sternal notch, where he had expected to find the coin, there was none. However, by passing the tube 4 to 6 inches further down, the quarter was encountered



lying transversely or flat against the vertebral column. A pair of grasping forceps was passed through the tube, the coin grasped and the tube, forceps and coin all withdrawn without any difficulty. The boy made an uneventful recovery. A stereoscopic radiogram was not taken. This method would have proved conclusively the great advantage of locating foreign bodies by this method rather than single pictures, which are so deceptive in showing the size as well as the location in the bronchi as well as in the esophagus.

Dr. A. H. Andrews, speaking of the location of foreign bodies in the chest by means of skiagrams, suggested a method he has used in other parts of the body, that is, placing an opaque object in a known position. This will serve as a marker. He usually places one in front and one behind. In one case he was searching for a bullet that was supposed to have been shot into the ear. A piece of metal was placed in each auditory canal. The skiagram showed these two pieces of metal, but no bullet.

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## NON-SUPPURATIVE ETHMOIDITIS

GEORGE PAULL MARQUIS, M.D.

CHICAGO

In presenting this paper it is not my purpose to take up a consideration or discussion of all the affections of the ethmoid, or even the one which is best known to rhinologists, namely, suppurative ethmoiditis, but to confine myself to a form which has received comparatively little attention, and which to my mind is one of the most important, for by the recognition and correction of this form, we may in a great many instances prevent the suppurative form, and what is far more important, we may often relieve great suffering which has existed for some time and baffled the efforts of rhinologists to relieve it, as they were looking for the manifestations which may not appear till a later period, namely, polypi and purulent secretion.

What an important part the ethmoid plays in relation to the other sinuses can be seen at a glance when we consider that the frontal and maxillary practically drain through this bone, as the hiatus semilunaris and infundibulum are parts of it. This is readily explained if we consider the development of these sinuses. Killian, Zuckerkandl and others claim that the frontal sinus is developed from "the chief developmental groove of the ethmoid." This can happen by an ethmoid cell pushing its way between the lamellæ of the frontal bone. Thus we may have the frontal sinus draining directly into the infundibulum or into another ethmoid cell, and an inflammation of this ethmoid with the attendant swelling of its membrane can easily occlude these openings and block off the drainage from this sinus, thus giving rise to the frequent condition of combined sinus affections.

The membranous lining of these sinuses is contiguous and identical with that of the respiratory portion of the nose, only it is much thinner, that of the ethmoid, according to Zuckerkandl, being thinner than that of the other sinuses. The membrane on the outer side of the middle turbinate is very thin, as can be noted in normal cases, by touching it with a probe.

The lining membrane of the sinuses is subject to the same inflammatory conditions as any other part of the nasal mucous membrane. These can arise primarily, or as is more usually the case, by extension from the mucous membrane of the nose. When the ethmoid membrane is involved we may find all the various changes from that of simple inflammation to the formation of polypi and bone necrosis. As polypi are the manifestations of chronic ethmoiditis it would be well to consider the various views held by different rhinologists as to their origin. Woakes claimed that following some injury or inflammation or so-called catarrh a small swelling developed on the medial surface of the ethmoid, which later coalesced forming myxomatous bodies, at whose base periostitis developed and finally bone necrosis.

Hajek divided the inflammatory changes in the membrane covering the ethmoid into three degrees:

1. A superficial inflammation of the membrane.
2. After it has involved the periosteum.
3. Extending even into the bony structure and manifesting itself by:
  - (a) increase of the bony substance, or,
  - (b) resorption or degeneration of the same; the former condition being more common.

He claims the formation of polypi is simply a manifestation of the inflammation and not a result of the affection of the bone. Cordes agrees partly with Hajek, but says recurring polypi are due to an ostitis or chronic periostitis with serous exudate, that when they arise from the membrane, a simple removal will cure, but when they recur it proves an involvement of the bone and necessitates its removal so far as the involvement extends. Uffenorde draws the following conclusions as the result of his investigations:

1. The process is progressive and extends from the surface toward the bone.
2. It is not always possible to differentiate histologically between polypoid swelling and polyp formation, as both may involve the deeper structures. Usually polyp development is the more chronic and is more often associated with bone disease.
3. Neither the polypoid swelling nor the polyps are factors in the bone involvement. This is simply a result of the chronic inflammation.
4. The changes in bone seem to take place more readily on the delicate walls of the ethmoid labyrinth than on the middle turbinate.
5. The inflammation can extend from one part of the membrane to another through the bone itself as well as through the openings in the same. It generally begins on the outer surface of the medial ethmoid wall.

Some authors have endeavored to show that polypi are always caused by an empyema of the ethmoid, but we believe that while these are frequently found together the polypi exist entirely independently of the empyema, in fact are frequently the cause of the latter. These polypi are simply the result of an inflammation of the mucous membrane, and are due primarily to the same causes which produced the general infection in the nasal mucous membrane.

The attendant watery discharge is not solely from the membrane over the ethmoid but from the entire nasal surface. It is true it is liable to

infection and may become purulent, thus giving rise to the idea that the polypi are the result of the suppuration, but in these very cases when the infection has subsided the discharge again takes on its watery character. Some will say that these are cases of so-called latent empyema where the patient has no trouble whatever for quite a while and suddenly through an infection or so-called cold, an exacerbation of the process takes place and we have an acute empyema on the base of a chronic one. These conditions, however, are entirely different, as in the empyema the patient is entirely free from symptoms during the periods of quiescence, and is troubled with secretion only during the stages of acute exacerbation, while in the case of the chronic ethmoiditis, non-suppurative, as we call it, the patient is never free from this discharge, only in the so-called latent periods, it is thin and watery in character. This is the form that Uffenorde describes under the name of hyperplastic ethmoiditis.

Skilern has conducted a series of experiments and demonstrated conclusively from a pathologic standpoint that this form of ethmoiditis occurs entirely distinct from the suppurative form.

Casselberry was evidently of this opinion regarding ethmoiditis when he described a simple edematous form as a forerunner of the suppurating and necrosing forms. However, in this case polypi were visible on examination, thus giving absolute evidence of the ethmoidal involvement. In the cases with which we have to do, frequently nothing can be detected but the thickened and edematous membrane on the side of the middle turbinate or ethmoidal wall, but in every one of our cases after infracturing the middle turbinate and opening the ethmoid, it was found filled by a mass of polypi. He sums up his observations as follows: "The sequence of events would then be first, simple myxomatous ethmoiditis which may assume as a variation the type of vaso-motor ethmoiditis with asthma, then nasal polypus, and finally suppuration of the ethmoid cells and of the collateral sinuses, by obstruction to their outlets, either by distinct polyps or myxo-degenerated tissues."

The method of development of this condition is as follows: In the course of an acute rhinitis the entire mucous membrane of the nose is affected. However, as the general process subsides the membrane covering the ethmoid wall and the outer side of the middle turbinal, owing to poorer facilities for drainage and existing hypertrophies from former attacks, does not regain its normal character, but under the constant irritation of the secretions undergoes a sort of hyperplasia. This spreads over the wall of the ethmoid and eventually involves the ethmoidal cells themselves. These cases are often described as vaso-motor disturbances in the nose. By others are called manifestations of hay fever.

To the casual examiner nothing abnormal is to be seen in the nose except perhaps a somewhat soft and thick membrane on the edge of the middle turbinate. Because he can see no pus in the middle meatus or no polypi anywhere in the nose and because the chief subjective symptom



is a profuse watery discharge he excludes the idea of an ethmoiditis, and places the trouble under the blanket diagnosis of nervous excitability of the membrane or a vaso-motor disturbance.

#### SYMPTOMS

As a general rule the symptoms of a chronic ethmoiditis are not so pronounced as those of an inflammation of the maxillary or frontal sinus. Probably the most constant is the headache frequently described as a burning or boring pain at the base of the nose, between the eyes, or it may be supraorbital.

In some cases this may radiate toward the temporal region. It may closely simulate a supraorbital neuralgia. One case which came under my observation had suffered for twenty-two years with the most exquisite supraorbital neuralgia. He had consulted various rhinologists and been told there was no cause for it in the nose. He had even had the supra-orbital nerve resected by a very eminent surgeon, but the so-called neuralgia persisted in spite of all this. After cleaning out the ethmoid fourteen months ago he was relieved and has had no trace of headache or neuralgia since. Frequently patients complain of a sense of fullness in the eye ball, pain on reading, spots in front of the eye, and especially increased tear secretion. Disturbance of the sense of smell is frequently complained of—the constant odor of burnt straw—or, on the other hand the sense of smell may be entirely lost.

Owing to the profuse secretion there is frequently an eczema around the edge of the nose. The secretion may be so increased that the patient will use half a dozen or more handkerchiefs a day, still there will be no stain on them as in the case of an empyema, the discharge being thin and watery.

Associated with ethmoiditis we frequently see asthma, pharyngitis, catarrhal affections of the middle ear and eustachian tube, chronic laryngitis, etc. Uffenorde reports a case where a patient was referred to him with suspected tuberculosis of the larynx. General nervous symptoms even to the extent of melancholia may be referable to an ethmoiditis.

*Diagnosis.*—If we bear in mind the normal anatomy of the ethmoid and the mucous membrane lining it, the diagnosis of this condition is not a difficult one. From the symptoms above given, if we are suspicious of an ethmoiditis, examine the middle turbinal and if possible the meatus, the bulla and uncinate process. If there are no signs of polypi touch the membrane on the outer wall of the turbinal. If it is thick and edematous it is almost pathognomonic of ethmoiditis. Should the turbinal lie closely against the outer wall so that it is impossible to examine the meatus, thoroughly cocaineize the area and insert a Killian speculum into the meatus, spread the blades and fracture the middle turbinal at its base and deflect toward the septum.

We can now obtain a complete view of the meatus and ethmoidal wall, the bulla and infundibulum. Frequently a number of small polypi will be found in the meatus. Often the entire chain of symptoms, which before were absolutely unexplainable, such as pain in the eyes, increased

watery secretion, headache, tendency to sneeze, asthma, etc., find an easy explanation when the middle meatus is open to view.

One of my cases showed nothing on examination but the thickened and soft membrane on the outer surface of the middle turbinal. On fracturing the turbinal and obtaining access to the meatus a polyp could be seen on the ethmoid wall. On opening this wall I found the entire ethmoidal labyrinth replaced by large masses of polypi. These gave no evidence of their presence except by the subjective symptoms and it was only after the turbinal was pushed to one side that they could be detected.

*Treatment.*—Attention was called to the importance of this form of ethmoiditis by Casselberry, who, in a paper read before the American Laryngological Society in 1894 says:

"Polypus is commonly one of the earliest prominent manifestations of ethmoiditis and where present the case should not be dismissed with a simple snaring as adequate to the occasion, but should be viewed as at least suggestive of a developing disorder, which is liable to culminate seriously unless controlled."

If the disease has progressed to the state where we have polypi which are visible in the meatus and infundibulum I think it is not sufficient to remove them with the snare or forceps or even to cauterize the base, but we should look for and remove the cause. If the middle turbinal has undergone polypoid degeneration in its anterior portion I should by all means advise its removal, i. e., the anterior one-third and then with a Hajek hook open the bulla. We now make use of the Uffenorde double curette or biting forceps and step by step, cell by cell, remove so much of the ethmoidal labyrinth as is diseased. So soon as we reach normal structure we stop *but not until then*. If this method be followed and careful exploration with the bent sound be made constantly during the operation, no mishap will result. The danger in such operations lies in scraping around in the dark with a curette or spoon. If one does not remove anything or attack any cell without seeing just what he is doing there is no more danger in ethmoidal surgery than in that on the outer sinuses.

In the diagnosis of this condition I explained the infraction of the middle turbinal and I prefer in most cases to make this a step of the operation and not unnecessarily sacrifice any portion of this bone. Of course, where the structure is diseased it is not only unnecessary, but wholly inadvisable to retain it. But we have a great many cases where this is not the case and the only sign we can see on examination is the thickened membrane on its outer wall. In these cases I think it more logical, more conservative, and of greater benefit to the patient to conserve this turbinal and simply infract and thus gain all the space necessary to complete the operation, and when the cure has been effected the patient still has the turbinal intact.

I have operated on a series of cases in this manner with excellent results and am confident that had I used this method sooner I would have retained a great many middle turbinals that I formerly partially amputated.

As this paper has already assumed greater proportions than I had intended I shall not add a list of my cases, but simply a few conclusions.

1. We have a form of ethmoiditis which exists without suppuration.
2. There may be no signs of this on examination except the thickened membrane on the outer wall of the middle turbinal.
3. When this condition exists, together with subjective symptoms, it is an indication for opening into the ethmoid.
4. Unless diseased the middle turbinal should not be amputated, but inflected.
5. Removal of the contents of the ethmoid labyrinth should only be practiced under full vision with control of the nasal sound.

103 State Street.

#### DISCUSSION

Dr. Casselberry, in discussion, stated that he was impressed with the fact that in his old records there were a great many diagnoses grouped under the heads of rhinitis, hypertrophic rhinitis, atrophic rhinitis, which at present would come under the head of some nasal accessory sinus disease. He has come to the conclusion that nearly everything in the nose to-day is sinus disease, although not necessarily suppurative. He thinks this is but the logical thing to expect where there exists a series of cavities with small outlets frequently subject to infection. Why should the freely drained mucous membrane of the nose proper be blamed instead of these poorly drained accessory cavities?

One cannot dispute the existence of ethmoiditis without suppuration. These cases may terminate in suppuration. They are but the early stages and may continue indefinitely without suppuration. These conditions are exceedingly common and very disquieting to the patient. Especially marked is the tumefaction of the middle turbinate body. He does not agree with Dr. Marquis that a large number of those cases can be relieved without resection of a part of the middle turbinate. He believes that the value of saving every bit of membrane in the nose is largely a fancy. In his experience much of the membrane destroyed in operations is regenerated. In addition to the resection of part of the middle turbinate it is frequently necessary to resect a part of the septum.

Dr. Frank Brawley, in discussion, stated that the majority of these cases consulted an oculist instead of a rhinologist, and usually come with a pocket full of glasses, and after having had their eye muscles exercised, etc. The close relation between the internal recti muscles and the ethmoid leads to the involvement of these muscles. In the diagnosis the presence of edema on the outer wall of the middle meatus was of great importance. One should remove enough of the middle turbinate to get a view of the ethmoid cells. The great tendency to the development of edema of the membrane covering the ethmoid is probably due to poor circulation, both in the blood and lymph. In the use of the vacuum pump to draw secretions from the sinuses he has been able to produce experimentally the type of headache of which these patients complain. In one case where there was severe frontal headache, removing the anterior third of the middle turbinal and opening the bulla gave relief for a year, when the pains returned, and it was necessary to perform a thorough exenteration of the ethmoid before permanent results were obtained. There was no secretion in the ethmoid cells, but there was edematous mucous membrane simulating granulation tissue.

Dr. A. H. Andrews, in discussion, stated that considerable progress was being made in this work. There are non-purulent inflammations which are just as uncomfortable to the patients as an empyema. In a number of cases where he had tried to save the middle turbinal he had removed this later only to find that it was decidedly diseased. He thinks it extremely difficult to press the middle turbinal against the septum sufficiently to learn much of the condition of the ethmoid. If the granulations or polyps are well developed, these may be



seen. Only recently by pressing the middle turbinal over he was able to discover polypi beneath it in a case that had gone the rounds of the oculists without getting relief. Removal of part of the turbinated and part of the ethmoid has made the patient perfectly comfortable. The pain experienced in this case was in and about the eyes when reading. The relation between rhinology and ophthalmology is very close. He believes that many of these cases are not due to infection at all, but are the result of the swelling of the membrane which occludes the apertures. The absorption of air in the cells then brings about congestion and exudation and the further changes described by Dr. Marquis.

Dr. William L. Ballenger, in discussion, states that he does not believe that there is a hard-and-fast distinction between the suppurative and non-suppurative forms of ethmoiditis. He believes that all cases are suppurative. He has seen a large number of patients the last five years who had been previously examined by competent oculists where a hyperplastic type of inflammation exists. In some the suppuration was present without hyperplasia. It is impossible to get relief from the use of glasses. The cause of the trouble is in the ethmoid. He removes the entire ethmoid labyrinth because in its partial removal he has encountered difficulties. In these cases the mucous membrane would swell so as to occlude, and very often infection followed. This he has never seen occur after exenteration of the labyrinth. The safest operation he believes is the complete exenteration. He has had one death where he believed the patient had a pre-existing meningitis, the nasal operation serving to incite the old trouble, the patient dying in a few days. The danger in operating in the ethmoid region is in partial work, not in complete exenteration. In cases where the hyperplastic changes are not marked, it may not be necessary to do a complete removal. Like Dr. Casselberry, he rarely makes a diagnosis of rhinitis of any type, since these cases are always of accessory sinus origin.

Dr. J. C. Beck, in discussion, stated that the histologic picture showed a difference of the two types—suppurative and the non-suppurative. The stroma of a polyp is fine in texture, the myxomatous tissue is clear. There are a few inflammatory cells. The epithelium in the non-suppurative type is well preserved; in the suppurative type it is multiplied and piled up. In the suppurative the texture of the polyp is denser than in the non-suppurative type. When the ethmoid bone is examined it appears different in the non-suppurative than in the suppurative process: in the latter there is otitis and necrosis; in the former there is thickening of the bone, but no inflammatory change. He believes the entire removal of the middle turbinal is indicated.

Dr. George E. Shambaugh said that he could not agree with Dr. Ballenger that the chief danger in operations on the ethmoid labyrinth lay in the leaving of some of the cells. Meningitis occurs not from extension through the roof of the ethmoid labyrinth, but by way of the cribriform plate which lies to the mesial side of the ethmoid cells. Meningitis follows operation on the ethmoid either because the operator has disregarded the cribriform plate which is much more delicate than the roof of the labyrinth, and has broken through this plate, or because infection extends along the sheaths of the olfactory nerves or along the blood-vessel and lymphangitic communication between the olfactory region in the nose and the meninges. Every effort should therefore be made to avoid injuring that part of the meatus nasi communis which contains the distribution of the olfactory nerve. This is the upper part of the septum and the plate that forms the median wall of the ethmoid labyrinth. If it is possible, as it will be in some cases, to force the middle turbinated body against the septum and leave it standing while the ethmoid cells are freely opened, the chief danger of the operation, that of injuring the cribriform plate or the part of the membrane containing the distribution of the olfactory nerves, will be avoided. In cases where the middle turbinate has to be removed, which is the more usual situation, this should be done with cutting and not tearing instruments. In the subsequent cleaning out of the ethmoid labyrinth the operator should leave the median plate standing.

Dr. Marquis, in closing, stated that when the middle turbinate was involved in the disease process it should always be removed. This was usually the case in the suppurative type. In the hyperplastic type of ethmoiditis without supuration, where the ethmoid cells are filled with polypi and the middle turbinate not involved, infraction of this body against the septum and the cleaning out of the ethmoid cells is all that is called for. Some of the non-suppurative cases may really suppurate at times, but there are other types where suppuration never occurs. There may be discharge, but it is thin and watery.

A case of thrombosis of the cavernous sinus with the post-mortem findings was reported by Dr. William L. Ballenger. The diagnosis was based on the presence of the characteristic exophthalmus associated with the usual septic symptoms of thrombosis. Post mortem revealed no focus of infection that could be recognized as such in the nose. There was an ulcerated lower molar tooth found which Dr. Ballenger held responsible for the thrombosis of the cavernous sinus.

Dr. George E. Shambaugh was unable to see any reason for attributing the thrombosis of the cavernous sinus to the presence of a decayed lower maxillary tooth. The direct extension of infection from the nasal mucous membrane by the way of blood-vessel and lymphatic communication is much more plausible. He referred to a case of primary thrombosis of the cavernous sinus which he had reported at the last meeting of this society, where the post-mortem examination failed to discover any primary focus of infection elsewhere and where the conclusion reached was that the infection had gained entrance to the cerebral cavity by means of blood-vessel and lymphatic communication between the nasal mucosa and the structures at the base of the brain.

Dr. J. R. Fletcher exhibited the forceps described at the previous meeting used for removing bone in various head operations.

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## AN UNUSUAL CASE OF COMBINED EXTRA- AND INTRA-UTERINE PREGNANCY.

C. D. CENTER, M.D.

QUINCY

Cases of ectopic pregnancy are common; cases of successful operations for ectopic pregnancy are of every-day occurrence. Cases of laparotomy with a pregnant uterus, the pregnancy going undisturbed, are not unusual. Cases of an extra-uterine pregnancy with an intercurrent intra-uterine pregnancy are on record, but the following report is of such an unusual nature that I feel justified in relating it to you, thereby getting it in print to help build one of those towers of statistics which are so valuable, not only to us, but to those who may come after us.

On April 15, 1910, Mrs. O., aged 37 years, married 11 years, and never pregnant, was seized with abdominal pain. This pain was accompanied with profound constitutional disturbance, pallor, weak pulse, sighing respiration, and the doctor in attendance, who was unable to make a diagnosis, believed that his patient was about to die.

On May 6, three weeks after the initial attack, the patient came to Quincy and came under my care. She was then very pale, pulse above 100, no temperature, nausea and vomiting, greatly distended abdomen, but very little pain or tenderness anywhere. A vaginal examination revealed a mass in and about the left broad ligaments, and a somewhat

enlarged uterus. From the findings, and from the history of the case, it became apparent that the case was surgical. There was one misleading feature for me, *i. e.*, that the patient said that she had had her menstrual flow normally and regularly. Laparotomy was done the next morning. The abdominal cavity was filled with dark decomposing blood, and a ruptured tube on the left side with fetal remains and decidua made the diagnosis clear. The fundus was soft and enlarged, a condition not unexpected, but it had more of the feel of a pregnant uterus than seemed usual. After removing the source of trouble on the left side, by tying off and amputating the left tube and ovary, I turned my attention to the right side. Here was an ovary so thoroughly disorganized by cystic degeneration that it seemed folly to leave it as a possible source of future trouble, and moreover the patient had instructed me to remove everything that was making or was likely to make trouble, so this tube and ovary was treated the same as the one on the opposite side. Recovery was uneventful except for two symptoms. There was not the usual flow which is expected after a removal of tubes and ovaries, and there was no expulsion of uterine decidua. The patient continued to complain of nausea, although there was no vomiting. She left the hospital in 20 days. One month after the operation, as nausea still persisted, I made a vaginal examination, and was mildly astonished to find the uterus apparently larger than before the operation. The patient then was told of the possibility of there being an intra-uterine pregnancy, and advised regarding the care of herself in the event that this should be the case. In 30 days more another examination convinced me beyond a doubt that she was pregnant, and December 25 she was successfully delivered of an 8-lb. girl baby. The delivery was instrumental. The placenta was delivered by compression. For about two hours uterine contraction was very poor and the flow rather profuse, although not alarming. From this time until January 1, she went on uneventfully, and on January 1, while on the bedpan she passed from the uterus the long lost decidua. It may be thought that this was the portion of the placenta, which had been torn from the mass, but there are two reasons advanced why this is not so. First, I examined the placenta carefully after it was delivered, fearing just such an occurrence, as it had remained in the uterus rather obstinately, and found that all had come away. Second, the nurse in attendance was the first person to discover this decidua, and she in telling me remarked "but it isn't placenta."

I have not had time to look up this class of cases in literature, so can not say just how rare it is to have a case of extra- and intra-uterine pregnancy at the same time, with rupture of the extra-uterine, with laparotomy and removal of the extra-uterine pregnancy, and both tubes and both ovaries, and have the intra-uterine gestation proceed undisturbed. But I am convinced that these cases are so unusual as to be in the nature of curiosities.



## UTERINE MYOMATA AND PARTURITION \*

CHARLES E. PADDOCK, M.D.

CHICAGO

Uterine myomata are usually interstitial in the beginning and become either submucous or subperitoneal, as the case may be. Should the tumor pass to the outer surface, it may remain attached by a broad base and become what is called a sessile tumor or take a pedunculated form with a narrow base. The surface of the uterus may be thickly studded with smooth spherical tumors, or one large one may rise from the surface, forming numerous nodules or a mulberry appearance. The pedicle of the pedunculated form is composed of uterine muscle tissue, which closes the vessels, furnishing blood supply to the uterus. We may also have a variety of tumor known as the intraligamentous, where the tumor pushes up between the folds of the broad ligament. There may be but one tumor, and there may be many, and frequently cut sections show the uterus completely studded with them. The blood supply is derived from the uterine muscles, but later some varieties may become parasitic, receiving the blood supply from surrounding tissue, such as omentum, Fallopian tube, and so forth.

The uterus is enlarged because of these tumors, the change simulating that of the gravid uterus, this enlargement disappearing after a myomectomy has been done, followed by perfect involution.

With these few facts before us we will consider these tumors in relation to pregnancy, labor and the puerperium. Medical literature furnishes us many reports of cases of fibromata complicating the pregnant uterus, and it may be well to enumerate the dangers attributed to their association. Among the dangers given we will mention the following few:

1. The tumors may increase in size, and frequently they do.
2. Placenta prævia may result.
3. Adhesions may fix the uterus in the pelvic cavity and cause an incarcerated gravid myomatous uterus.
4. Prolapse of the cord is frequent.
5. Malpresentations and malpositions of the fetus and interference with the mechanism of labor. Lafour found that 49 per cent. showed abnormal presentations. Olshausen says that the presentation in his cases was 53 per cent. vertex, 24 per cent. breech, and 19 per cent. transverse.
6. It is said that the fibroid may press on the Fallopian tubes so that ectopic pregnancy may result.
7. Post-partum hemorrhage due to the contractions of the uterus or inertia uteri sometimes occurs.
8. Pedunculated tumor may become encysted and peritonitis ensue.

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\* Read before the Chicago Medical Society, Oct. 26, 1910.

9. Pressure symptoms causing varicose veins and swelling of the lower extremities are also to be taken into consideration.

When we consider the number of women having fibroids and also the large number who have gone through pregnancy with these fibroids, and still suffer no inconvenience, we wonder if there is so much danger after all.

It might be fitting to the subject to allude briefly to the effect of myomata on fertility. Hofmeier says that rarely does a woman who has borne children come to him because of fibroids. Occasionally, however, he is consulted because of the pregnancy and a fibroid is found. Virchow says he rarely holds a post-mortem on a spinster that he does not find a myoma uteri, and rarely does he have a post-mortem on a patient who has borne children that he finds a myoma. Pathologists generally agree that the unmarried and sterile married and those with but one child are particularly disposed to fibroid growths. There can be two interpretations placed on these statements. First, that the sterility is due to the fibroid, and, second, that the fibroids are due to the sterility. Virchow's statement would lead us to the conclusion that the latter is the case, and this is the opinion of Hofmeier. Kelly and Cullen<sup>1</sup> furnish a series of cases on the subject, as follows: 1,149 cases; number of married, 842; single, 307. All were married before forty years of age; 584 of these were sterile; 75 had miscarriages, but no full-term birth; 490 had children. Number of married, 842. Of the sterile patients, 295 were married.

Commenting on the above facts, the author says that in myoma cases the appendages are adherent in a large percentage of cases, and as this in itself would account for the sterility, we are still unable to say with any degree of certainty that the myoma *per se* was the direct cause of the sterility.

Fibroids, according to these authors, favor adhesions, and in over one-half of their cases, either one or both tubes were found bound down by these adhesions. One might question the conclusion that these adhesions are due to the tumors, the claim being that the friction caused them. It is not certain how many of these were fibroids, but surely these statistics would go to show that pregnancy and fibromata were incompatible. In the face of this, however, we have the opinions of Hofmeier and the conclusions of Virchow, which are almost indisputable.

In considering the effect of myoma on pregnancy, the location and size of the tumor is of great importance. A small subperitoneal tumor would not be likely to cause dystocia, but a small submucous one might not only prevent conception, but if pregnancy did occur might lead to serious results. An interstitial myoma or a sessile one, situated low down in the pelvis, would be more likely to interfere with pregnancy and labor than the same tumor in the fundus. The fact that once in a while serious complication arises, where tumors complicate pregnancy, has, I believe, resulted in causing an unwarranted uneasiness on the part of many physicians whenever a tumor is found to exist. The writer has

1. Kelly and Cullen: "Myomata of the Uterus," 1909.

frequently been consulted because of the presence of a tumor situated where there was no chance of its causing unfavorable symptoms, and found the physician and the family unnecessarily alarmed. A careful inquiry showed that the case resulted normally.

Abortions are more frequent in the second or third month, the same as in ordinary cases. The larger the tumor, the greater, it is said, is the tendency to miscarriage. Pressure symptoms are frequently present to an alarming degree, and it would seem that there might be a greater tendency to abortion at such a time. This pressure, however, can frequently be overcome by rest, diet, elimination, and proper support, and operative procedures or abortion thwarted.

Parvin claims that the average normal sterility is one to eight, while the sterility in married women having myomata is one to three. Hofmeier presents statistics from his private and clinic patients at Wurzburg, as follows: Of 2,795 private married patients, 447 were sterile, or 17 per cent. Of 5,462 clinic patients, 441 were sterile, 8 per cent. Out of approximately 8,000 cases, 11 per cent. were primarily sterile.

Kerr<sup>2</sup> shows how few operations are necessary in his clinic. The cases certainly must have contained a number of fibroid tumors. Still, out of 35,000 deliveries during six years at the Glasgow Maternity, laparotomy for any cause was done only three times.

Spencer<sup>3</sup> says that in fourteen years at the University College Hospital there were 35,000 cases of labor, and laparotomy and removal of the uterus was only required once.

Pinard, from 1895 to 1901, inclusive, furnishes reports of 14,000 cases. There were myomata in 84; 66 of these went to term, 13 were prematurely delivered, and 5 aborted. In only 4 was it necessary to interfere with pregnancy.

Tumors that at first seem to be so situated that the blocking of the inlet seems certain were later drawn up out of the pelvis either in pregnancy or labor. Again, a large interstitial tumor may become so flattened and disguised by pregnancy that it would be impossible to correctly diagnose it. Such a case was attended by the writer within the past few days.

CASE 1.—Mrs. L., i-para, aged 24 years, seen by the writer for the first time in labor. Position of child, occipito-left anterior. The head engaged, but the fundus high. A distinct sulcus on either side of the abdomen on a line with the umbilicus between pains. During pain this sulcus disappeared, due to the distention of the thinned out uterus at this point. With the head upon the perineum and the pains continuing regularly but rather short, the fundus still remained high. Delivery was terminated because of impending asphyxia of the child, the heart tones becoming about 180. The child was born in asphyxia pallida, covered with meconium and sphincters relaxed. Easily, however, resuscitated. The placenta was delivered by the Credé in ten minutes. Uterus high and hard, but no hemorrhage. Twenty-four hours later the fundus was found about two fingers above the umbilicus, hard and round, and a diagnosis was made of a large myoma (interstitial) of the uterus.

2. Kerr: *Operative Midwifery*, 1909.

3. Spencer: *London Obstetrical Trans.*, xlviii.



The clinical picture here presented should probably have led us to a proper diagnosis before delivery. Whether the tumor had anything to do with the asphyxia or not, we are unable to say.

Pressure symptoms are the most serious complications in pregnancy. In some cases even the greatest pressure will not be noticed while in others the slightest pressure will cause all kinds of trouble. Tumors pressing on the bladder or on the rectum and on the diaphragm may become so serious as to demand immediate attention.

A pedunculated fibroid, by pressure, may cause premature labor, or it may become twisted, with resulting peritonitis. A case came into the practice of the writer answering this description.

CASE 2.—Mrs. H., colored, aged 38 years, ii-para. In labor at seven months of pregnancy. Rest and opiates stopped the contractions. At intervals for the following week labor would ensue, but it was controlled again by opiates. A tumor corresponding to the size of the child's head was found located in the abdomen and probably attached to the fundus uteri, quite tender upon pressure. A laparotomy was done for removal of the tumor, hoping to be able to continue the pregnancy to term. The tumor was found attached to the fundus by a narrow base and long pedicle, considerably twisted and presenting evidence of degeneration. This tumor was removed and being attached directly over the placental site it was impossible to control the hemorrhage. The uterus was opened and a premature living child removed. The vaginal hysterectomy was then done and other tumors found posteriorly in the uterus.

It would make this paper too long and neither would it be of any interest to dwell on the number of bad effects which these tumors might have on pregnancy. Suffice it to say that anyone having a large practice will occasionally encounter a case where pregnancy must either be interrupted or is interrupted because of such a tumor.

Whether the placenta is situated under the tumor or not, or whether placenta previa is sometimes caused by these tumors, is a question difficult of solution. The number of cases which have come under the supervision of the writer does not lead him to believe that post-partum hemorrhage is frequent. Olshausen<sup>4</sup> says that implantation of the placenta under this tumor is more than a coincidence, owing to its frequency; on the other hand, Wertheim doubts it, and quotes the case of Schwarzenbach, where that portion of the placenta over the tumor was very poorly developed.

Puppel<sup>5</sup> reports a case where the placenta was so adherent to a fibroid that the uterus had to be removed. Here, again, we question the cause assigned to this condition, as frequently we find adherent placentas where, fibroids are not present.

Sacculation of the uterus is another condition not before mentioned, which might also call for interference.

The frequency of fibromata complicating pregnancy is very difficult to ascertain. The reason of this is due partly to the fact that different operators place a different value on these tumors. Where one would report the smallest tumor which could be palpated, another would only report those of a serious nature and liable to cause complications.

4. Olshausen: *Winckel's Handbook*, Vol. ii.

5. Puppel: *Deutsch. med. Wehnschr.*, Dec. 17, 1903.

The general opinion is that myomata grow rapidly during pregnancy, and this is borne out by clinical evidence. On the other hand, it is not unusual to find a large interstitial variety so altered in shape, or, rather, become so absorbed in the uterine wall, that it is with difficulty outlined. This increase in the size of the tumor is principally due to edema, and the growth seems to be more especially with the interstitial variety.

Bland-Sutton<sup>6</sup> published a paper entitled "The Inimicality of Pregnancy to Uterine Fibroids." This paper caused no end of discussion, and coming from such a well-known authority, the statements which he put forward were accepted and acted on. This resulted in the wholesale removal of pregnant uteri, of myomectomies, both for single and multiple, even dissecting the uterus to the point of exposing the decidua. This, of course, led to the termination of many pregnancies which would have undoubtedly been successfully terminated by normal labor. Fortunately, the tide has turned and conservatism in the treatment of these cases is the rule. He claimed that degeneration of the fibroid during and as a result of pregnancy is a common occurrence. Pain and tenderness go hand in hand with this condition. This degeneration is known as red degeneration. It is true that pain often accompanies these tumors during the pregnancy, and just why the writer is unable to say, and as yet he has failed to operate on such a case, unless as in the case mentioned above.

Pinard solved the problem when he said, in discussing a report of two cases that were operated on because of extreme pain, and no degeneration found, that had the patient been placed in bed with complete rest, with a proper diet and good elimination, the case could have been held along to term.

In delivery, tumors situated low down in the uterus are no doubt frequently injured. The submucous fibroids may also cause a great deal of trouble at this time. It is said not to be unusual for a tumor which has been severely pressed on in delivery, or which has been injured in delivery, to be followed by infection and serious consequences. Cases are on record where submucous fibroids have presented in front of the head of the child and been mistaken for the latter; also where following delivery a sloughing submucous fibroid has presented at the external os. These cases are, however, rare, but must be mentioned as liable to occur.

The diagnosis of fibroids complicating pregnancy is not always so easy, and when we read the reports of cases operated on for fibroma by our leading surgeons, and the case found to be one of a normal pregnancy or *vice versa*, we are surprised at the few mistakes made by those less skilled. Even though the abdomen be opened, it is sometimes difficult to state whether pregnancy will be found complicating the fibroid. Those cases where we have the signs of pregnancy, with the tumor situated in a favorable locality, there can be, of course, no doubt as to the diagnosis. but in one situated and seen late in pregnancy, as the one quoted above, there might be some excuse for a mistake. In the early months of pregnancy a few days more or less can well be taken. A gravid uterus grows

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6. Bland-Sutton: "Essays on Hysterectomy," 1904.

rapidly. It were better to wait as long as there are no unfavorable symptoms, and clear up the diagnosis before giving advice as to the course of treatment to be pursued.

The results following myomectomy in pregnancy are not as satisfactory under all conditions, and still frequently it seems the best thing to do. The ease with which the tumor can be shelled out is remarkable. If the tumor be so large that it is causing pressure symptoms, the incision must of necessity be so great that danger of rupture of the uterus following such an operation is a serious consideration. Then, again, the danger of hemorrhage during or following the operation, after the abdomen is closed, is to be considered. It would seem to be the wiser procedure if it is necessary, because of the location of the tumor, during pregnancy, unless it might be the pedunculated variety, that the uterus be either removed or pregnancy terminated. Rarely are these tumors single, and the removal of one tumor is not necessarily going to assist our patient. Tumors blocking the pelvis in early pregnancy do not necessarily mean that this pregnancy should be terminated. In skilled hands there is but little, if any, more risk to the patient to let the pregnancy continue until term, and then perform whatever operation seems best. Of course, bearing in mind all this time the pressure symptoms which might ensue on adjacent organs. A uterus thickly studded with myomata and pregnant should be removed when diagnosed. It is in this class of cases that we get abortions; it is impossible for us to expect a living child under such a condition.

What the writer wishes to emphasize is that myomectomies in pregnancy should be few; that fibroids of the uterus, especially those found in the fundus, do not influence pregnancy unfavorably, and unless they are so doing the pregnancy should be allowed to continue. Wherever a large fibroid exists, whether it be of the interstitial variety or subperitoneal variety, the principal danger would be in the delivery, and such could be anticipated. Post-partum hemorrhage might be so great as to become uncontrollable; cases are on record where following delivery it was necessary to remove the uterus. Consequently, in all such cases this fact should be borne in mind, and before delivery the case should be taken to a hospital where the best of attention can be given.

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## SURGERY OF THE PLEURA \*

O. L. PELTON, SR., M.D.

ELGIN

Mr. President and members of the Elgin Physicians' Club: The subject given me for to-night, "Surgery of the Pleura," dates back to the fourth century B. C., when Hippocrates wrote on pneumonic abscesses, and his opening them through the chest wall, sometimes resecting a rib. However this may be, the progress in this branch has been intermittent

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\* Read before the Elgin Physicians' Club, Oct. 3, 1910.



and slow up to a decade or two ago in comparison with other lines of surgery.

Let me call your attention to one or two essential points in the anatomy of the pleura. Under normal conditions visceral and parietal pleuræ are in close contact, the inner surface of the pleura being smooth and polished and moistened by a serous fluid. In health it is usually impossible to separate the pleura from its attachments to the rib without opening the cavity, but in disease we frequently find the pleura much thickened and that we can easily pull it off from the ribs without danger.

The pleura mediastinalis is attached intimately to the esophagus, trachea, pericardium, vagus nerves, innominate artery, superior vena cava, etc., the attachments being about the same on both sides. It requires a careful dissection to separate it from the structures named above. Dr. Murphy calls our attention to the attachment to the innominate vein and subclavian artery, which must be remembered in pneumectomy for apical disease, as adhesions so often exist. Also adhesions at this point frequently produce paralysis of the abductor muscles of the vocal cord on that side with symptoms of laryngeal paralysis.

The sternal attachment recedes gradually from the center on the right side to the lower margin of the fifth space. On the left side it recedes quite abruptly from the fourth rib, thereby exposing the pericardium in the fifth space immediately to the left of the sternum. It is at this point that the pericardium may be opened without injury to the pleura.

We must not lose sight of one fact, and that is that the pleura reacts readily and rapidly to irritants, but is not so active in reproduction and reconstruction as is the peritoneum.

It is difficult to find much in the literature on traumatic injuries of the pleura, but it is my opinion that injuries of the pleura are much more serious than is commonly believed to be the case, as, for example:

Case 1.—J. W., aged 54 years, was injured by being pinched between two cars. He had two ribs fractured on the right side; the lung was not punctured as far as I could ascertain, but there was great shock and depression and acute pain on the right side in the region of the seventh and eighth ribs. The ribs were easily brought into place by straps. There was no cough. On the third day an effusion developed. On the fourth day the dyspnea, rapid pulse, temperature, and pain began to subside, but were immediately intensified if he endeavored to turn over or move in any way. In fact, every one thought him improving when on the morning of the ninth day he tried to sit up, but the dyspnea increased, cyanosis was marked, he became unconscious, and died within five minutes in spite of the stimulants administered. No post-mortem was allowed.

Case 2.—A. C., aged 32 years; farmer. While running a gasoline engine he was caught in the machinery and thrown several feet. A plank struck him in the right chest. The injury was not considered of a very serious nature until the second day. At this time dyspnea and cyanosis were marked, with extreme discomfort and acute pain in the right chest. I saw him at this time in consultation, and found he had fractured the eighth and ninth ribs in the anterior axillary line. An effusion had doubtless developed in this region, as there was marked dulness and loss of respiratory sounds. His pulse was 150, and small, with a temperature ranging between 101 and 103; respiration 60. He was brought to the hospital, where we put him at rest. For a week he remained in a dangerous

and precarious condition, we being very much in doubt as to his recovery. On the seventh day I aspirated about three ounces of bloody fluid. His temperature, dyspnea, and cyanosis gradually subsided, but there was acute pain if he attempted to move. After the second week he began to show signs of improvement, and from this time he made a slow recovery, the dullness of the right side becoming less and less each day. He was discharged at the end of the fourth week.

If my time were not limited, I could cite you a number of cases bringing out the fact that injuries to the pleura are of more serious and dangerous import than most men believe; also that the pleura is exceedingly slow in absorption and reconstruction.

Thus cases of traumatic injury must be put at rest and treated expectantly, dealing with conditions as they arise. Following trauma, we may have develop such conditions as pneumothorax, hydrothorax, hemothorax, chylothorax, or empyema. These conditions I shall discuss separately and briefly, with the exception of the last.

Pneumothorax is usually due to a penetrating wound of the chest wall or perforation of the lung. If caused by a wound in the chest wall which has been quickly sealed, there is a slight increase in the frequency and depth of the respiration, which is increased on exertion. Should the wound be open enough to allow air to be drawn in and forced out with each respiratory effort, we shall notice there is extreme discomfort, marked dyspnea and cyanosis, and symptoms in general will be greatly increased. If, also, there is impaired function of the other lung, the respiration may become alarming and suffocation ensue.

If there is no external wound, and little or no dyspnea, a moderate amount of air will usually be absorbed. If, however, the dyspnea is severe, it is best to aspirate, which usually affords great relief. On the other hand, if the condition is caused by an external wound, the indications are to close the wound as quickly and as completely as possible. Where it is believed that the pleura is not infected, the wound should be thoroughly cleansed and sutured and aseptic dressings applied when the dyspnea is severe, otherwise drainage should be established. In alarming cases, it has been recommended to suture the lung to the parietal pleura.

Ehrmann, as stated by Brewer, in a case of pneumothorax and progressive cutaneous emphysema from subparietal rupture of the lung, opened the chest and introduced a firm rubber drainage tube, to the external extremity of which was attached a smaller collapsible rubber tube. He then hermetically closed the wound in the thorax around the larger tube. He found that air was expelled from the parietal cavity by the expiratory effort, but during the inspiration the small tube collapsed, preventing air from entering. This device proved successful, and the case recovered.

Hydrothorax as a rule is of purely medical interest, but it may result from such conditions as injury to the pleura or lung, and occasionally we see it following a subphrenic abscess. In uninfected cases the fluid is clear, straw-colored, or greenish in appearance, contains a few leukocytes, and some albumin. In infected cases we find certain bacteria, more leukocytes and albumin. The difference between an exudate of this kind and the pus in empyema is one of degree only. Medical treat-

ment usually is sufficient, but when this fails, we must resort to aspiration. If the fluid reaccumulates, we must resort to repeated aspirations. Cases have been reported where it has been necessary to introduce permanent drainage or even do a thoracoplastic operation. Of late some very good results have been obtained from autoserotherapy, which I shall discuss more in detail later. We must not fail to keep in mind the underlying cause which must receive proper and necessary treatment.

Hemothorax interests the surgeon as a rule only as a result of trauma. There are often no external signs, so the diagnosis must be made from symptoms of internal hemorrhage combined with signs of fluid in the pleural cavity. The treatment is absolute rest and morphin sufficient to prevent cough; straps or a binder to diminish the respiratory movements; and the application of ice. If it is believed that the bleeding point is in the chest wall, it is best to make a free incision and secure the same by ligature. In desperate cases where it is thought the bleeding comes from the lung, it may be necessary to open through the chest wall, causing an artificial pneumothorax and the lung to collapse, thus controlling or suppressing the hemorrhage. Where there is continued bleeding and a reasonable hope of success, Brewer advises opening the chest and securing the bleeding point by means of ligature, suture, cauterization, or a firm gauze pack. He also says that it has been demonstrated experimentally that it is a safe procedure to secure the bleeding point of the lung by large mass ligatures and return to the pleural cavity. In addition we must of course raise the foot of the bed, make use of normal salt solutions and other stimulants, as may be deemed necessary.

Chylothorax results from injury to the thoracic duct, caused by a fracture of the spine or a malignant or suppurating disease of the duct walls. In trauma this condition is doubtless frequently overlooked because of other more grave and serious symptoms which the injury has produced. The symptoms are those of gradually increasing fluid in the pleural cavity and the progressive loss of strength and weight. A positive diagnosis can only be made by the exploring needle although it must be remembered that fluid found in the chest in some forms of malignant disease resembles chyle. The treatment is unsatisfactory, as a radical operation for closure of the wound is absolutely out of the question. Aspiration is all we can do, but repeated aspirations have been followed by a cure.

We now come to that subject which has been of the most interest not alone to the surgeon, but to the internist as well. More work both clinically and experimentally has been done on empyema than any other condition in the chest.

Empyema, or pus in the pleural cavity, may be caused primarily by infection through an external wound or by bacteria being conveyed to the pleura through the blood stream. Secondarily it is caused by infection reaching it from some neighboring focus such as a pneumonia or abscess of the lung, subphrenic abscess, mediastinal disease, or some focus in the chest wall. As mentioned above, most cases of empyema except those resulting from infection through an external wound, start



with a clear straw-colored exudate, but as the disease progresses, the leukocytes increase and the fluid becomes more cloudy and finally pus is formed. The pus produced by the pneumococcus is thick and creamy and yellowish or greenish in color. Foul smelling pus is usually due to the colon bacillus. In streptococcus infection we find a thin watery and flaky pus, and in tuberculous empyema a thin and watery pus often containing caseous material. Rarely, chronic empyema may be caused by actinomycosis or one of the streptothrix group. The pleura is always thickened and covered with a more or less extensive fibrinous exudate. The pus is frequently divided into two layers, the lower of thick pus, while the upper may be clear and watery.

Localized empyema walled off by adhesions are not uncommon; interlobar empyema following pneumonia, and an empyema between the diaphragm and the base of the lung resulting from some abdominal focus. I shall not dwell on the symptoms which are largely those of pleural effusion with compressed lung and septicemia. But let me call your attention to the fact that in children a large effusion often gives the physical signs of consolidation of the lung.

As regards the diagnosis, I cannot lay too much stress on the differentiation between empyema and cholecystitis or appendicitis. Twice in years gone by I have had brought to me cases which I operated for cholecystitis and a week or ten days later I have drained the pleural cavity for empyema, thus relieving the patient of those symptoms which I had thought were caused by a gall-bladder infection. I find that many of our foremost American surgeons have had the same experience at some time, so let us beware. To-day and for some time past I have used a long exploring needle not once only, but if necessary over and over again until I have been absolutely certain of my diagnosis. We are aided to-day by the x-ray and skiagraph, and more recently still by the stereoradiograph brought to our attention by Dr. Emil Beck of Chicago.

The prognosis of course depends on several factors, such as the character of the infection and the degree of toxemia and prostration already present from the primary disease. A tuberculous empyema gives a bad prognosis. Rarely cases die suddenly. I had one a few years ago.

Case 3.—J. W. H., aged 34 years, farmer, came to me suffering from a typical severe cholecystitis. He was brought to the hospital, where I operated on him. There was some leakage around the gall-bladder, and a subphrenic abscess developed, followed by an empyema which I drained fourteen days after the primary operation. On the third day following the drainage, he was much improved and spent the afternoon talking with his father. The father had not been gone from the hospital twenty minutes when the patient had a seemingly epileptic convulsion and died within an hour, never regaining consciousness.

I have never been able to satisfy myself as to the cause of this sudden death, but I find Osler says:

"Faintness is not uncommon. Epileptic convulsions may occur either during the withdrawal or while irrigating the pleura. I have seen but a single instance. They are very difficult to explain and are regarded by most authors as of reflex origin; and lastly sudden death may occur from syncope or during the convulsion."

I shall consider first non-tuberculous empyema. While there have been a few cases recorded that have recovered either by absorption or spontaneous rupture, the only fast rule to follow is that of operation unless of course the patient is in an actually dying condition. I believe it is best in these last mentioned cases to open the chest at the house. For a number of years ago I had an experience in this line which proved entirely unsatisfactory. I was called in the night eight miles in the country to see a case of a man who had been sick three months with empyema following pneumonia which had been diagnosed consumption. I advised that the man be brought to the hospital the next morning, and that we would operate on his arrival. When being prepared for the operation the abscess broke into the bronchi, which caused him to nearly suffocate. Believing that he would rally from this, the operation was postponed. On the second day he developed a septic aspiration pneumonia and died the following day without operation. I believe if this case had been operated on at the home and later removed to the hospital for a secondary operation if such had become necessary, that the case would have recovered.

It is largely a matter of the surgeon's choice or judgment which operation he does, and whether he uses a Wilson drainage-tube, a simple rubber-tube, or a few strands of silkworm gut. In children it has been my experience that a simple drainage under local anesthesia has usually been sufficient, the wound closing in from three to four weeks. As soon as I have made my opening, I get my drainage-tube in and my aseptic dressings over the wound as quickly as possible so that the fluid will escape slowly. In large cases of effusion I usually open between the sixth and seventh or the seventh and eighth ribs in the mid or posterior axillary line. Of course, in cases of a circumscribed abscess, the opening must be made over the same. In adults I have obtained quicker and more satisfactory results by giving a general anesthesia where such is possible and making a drainage by resection, for I have found that a resection usually had to be done later in those cases where I used a simple drainage.

Aspiration had given entirely unsatisfactory results until Dr. Murphy began the use of his 2 per cent. solution of formalin in glycerin following aspiration. In a recent communication from Dr. Murphy he says:

"I am treating all my cases of empyema, that do not communicate with the bronchus or that have no external communication through the chest wall, with injection of one or two ounces of a 2 per cent. solution of formalin and glycerin after aspirating as much pus as will come out. This is repeated every week until the pus has changed to a sero-sanguinous and finally a serous fluid. Absorption and recovery follow."

In cases where the asepsis has been perfect throughout, it is very rare to have a sinus develop. These sinuses are best treated in my judgment by the use of Beck's bismuth paste. I have had some experience in this line, but my series is not large enough so that I may draw any definite conclusions. In those cases in which I have used it I have had perfect success and satisfaction. In these cases I started with formula No. 1

consisting of one part arsenic-free subnitrate of bismuth, which I have injected every other day until the suppuration had almost disappeared, when I commenced with formula No. 2 consisting of 30 parts of bismuth, 60 parts of pure amber-vaselin, and 10 parts of paraffin hard enough to give the paste some firmness at body temperature. It is possible in this treatment to get a bismuth poison which has largely the symptoms of mercurial poison. Should this develop, Dr. Beck has advised the injection of warm olive oil, which will make an emulsion in a short time. This emulsion should be drawn off at the end of twenty-four hours.

Where operation has been delayed, we often find a chronic suppurating cavity which cannot be obliterated. These cases often lead to chronic sepsis with progressive anemia, cirrhotic changes in the lung, and amyloid changes in the other organs. As the cirrhotic and collapsed lung cannot expand, some measures must be adopted to bring the chest wall and the lung in close approximation. For these conditions the operation of Estlander has been recommended, and when this fails, do the more radical operation of Schede. Most of you present here to-night will undoubtedly remember when Dr. Ferguson of Chicago demonstrated to us here his first case of this kind, which was the first Schede operation performed in this country. In my judgment these last two operations will not be done as often in the future as they have been in the past because of the results obtained by the use of bismuth paste. Dr. Emil Beck only recently reported a case where he resected a few ribs for a chronic incapsulated abscess and injected immediately into the cavity a paste containing 5 per cent. bismuth in vaselin. He said that on the second day there was a serous discharge; he injected bismuth paste twice again, and at the end of the first week all that was exuding from the wound was a little vaselin, and that the wound closed completely at the end of the second week.

If operation has been performed at an early period in the disease, the lung usually expands readily as soon as the suppuration has ceased, but in those cases where operation has been delayed and the lung is collapsed, it is best during convalescence to have the patients increase their intratracheal pressure by the use of the Wolf bottles, thus causing the lung to expand. They should blow into these bottles, in my judgment, at least twice each day. In children I have obtained some good results by placing a glass funnel over the wound and attached to the small end of the funnel an aspirating syringe. In this manner the lung can be drawn into the wound, but we must exercise great care in so doing that we do not injure the lung. Again, when the operation has been delayed and the lung is collapsed and is firmly held by a thick, fibrinous exudate, Fowler and Delorme have advised that we open the chest by a large osteoplastic flap and strip the thick fibrinous covering from the pleura. Such decortication often allows an immediate partial expansion of the lung, which will then go on to recovery.

Tuberculous empyema has in the past given a bad prognosis, and it was not advisable to open and drain for this condition, because we found



the same symptoms here that we would in a cold abscess. On opening the lung we would immediately get a mixed infection followed by septic intoxication. I have in the past tried the iodoform emulsion in a number of cases, but without success. To-day we are able to cope with these cases in a satisfactory manner and with far better results by the use of Dr. Murphy's treatment. Should the abscess open into the bronchus or there be an external wound, thus preventing our using 2 per cent. formalin in glycerin, I believe in drainage followed by the use of bismuth paste. Dr. Emil Beck only recently reported a case of tuberculous empyema in a young man in whom he injected in April 1908 720 grams of bismuth paste, which remained six weeks. The patient gained in weight, but at the end of the six weeks he developed signs of bismuth poisoning. The cavity was immediately filled with 500 c.c. of warm sterile olive oil which formed an emulsion with the paste, the same being withdrawn on the following day. The symptoms of intoxication immediately disappeared, the patient again gaining weight. He discharged a seropurulent fluid until December the same year, when the sinus closed and remained so for three months. At this time the cavity was refilled with pure sterile petrolatum. It closed again the following day and has remained so to date.

As regards non-purulent tuberculous effusions, I wish to state that I have had great success in a number of cases by the use of the 2 per cent. formalin in glycerin solution. I wish to mention here two cases out of the series:

Case 4.—Mr. J. K., aged 35 years, came to me with a temperature of 103, constant and persistent cough and expectoration. On examination I found dullness extending over almost all the right lung, absence of respiratory sounds and vocal fremitus on auscultation. I advised him to go to the hospital, where I aspirated 28 ounces of dark straw-colored fluid, and injected 2 ounces of 2 per cent. formalin solution. The fluid aspirated was found to contain large quantities of tubercle bacilli. After the reaction from the injection, which is usually quite severe the first time, the temperature immediately dropped, and ten days later the operation was repeated, getting only 16 ounces of fluid with injection of 2 ounces of 2 per cent. formalin in glycerin solution. This operation was repeated at intervals of ten days to two weeks for a period of two months, the amount of fluid becoming less and less each time. At the end of two months he had gained a great deal in weight and was able to do some work, and for the past eight months he has seemed entirely well and is doing a man's work. I wish to emphasize the fact in this case that all the time he was under treatment and is still being treated for the underlying cause of pulmonary tuberculosis.

Case 5.—T. G., aged 28 years, teamster, came to me from a neighboring town after being sick and unable to work for over six months. He had a temperature of 102.4 with a slight cough and some expectoration. On physical examination I found signs of effusion extending over the lower half of the left lung. He went to the hospital where I drew off 18 ounces of straw-colored fluid which on examination was found to contain tubercle bacilli. After the aspiration I injected 2 per cent. formalin in glycerin. This operation was repeated at intervals of ten days or two weeks, until no more fluid had formed. He was of course on forced feeding and other treatment for the underlying condition, and has been to date. He is now doing his usual work.

Some very good results have been obtained in tuberculous effusion by the administration to the patient of his own serum. This was first originated by Gilbert of Geneva twenty years ago, but has only come into prominence of late. Marcou has recently reported a number of cases in which he obtained exceedingly good results. The technic is to withdraw 2 or 3 c.c. of fluid from the chest by means of an aspirating syringe and a long needle. Withdraw the needle slowly, and when the point is felt under the skin, the syringe should be inclined and its entire contents injected into the subcutaneous tissue. In many cases recovery follows one injection. The second injection should be done when it is found the fluid has stopped diminishing. As early as the second day a decided decrease in the amount of effusion can often be noticed. Out of Marcou's eighty-two cases, more than one-half were seen again two or three years after the recovery, and in no instance was there any rapid tuberculization observed.

There is little new to be said regarding new growths of the pleura, and as the time is short I shall pass over them, sufficing to say that in the primary form they are extremely rare. The diagnosis may often be made by x-ray or skiagraph. If fluid is present, aspiration is indicated, which does not alter the physical signs.

As regards the treatment, the only thing to do is that of a radical operation, the removal of the tumor, if it is diagnosed before it becomes too extensive.

Thus you may see that more has been done on the surgery of the pleura in the past few years than ever before, and I believe that the next few years will show even more progress in this line than in that of a corresponding period in the past.

Before closing, let me take this opportunity of extending my thanks to Drs. Murphy, Ochsner, and Beck of Chicago, who so kindly forwarded me literature on this subject.

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### PHTHISIOPHOBIA \*

FREDERICK TICE, M.D.

CHICAGO

No one can doubt that an inestimable amount of good has resulted in the present world-wide anti-tuberculosis movement but it must also be admitted that some of the results are, unfortunately, most deplorable. With the increased distribution of knowledge there has gradually developed at least one formidable and undesirable feature. The previous condition of careless indifference has been transformed into one of fear and hatred; a condition of actual phobia. To a certain extent it was to be expected that this would occur as soon as the dark ignorance of the past was dispelled by the light of the present, but that it would develop into an active, acute form is most unfortunate and surprising. As proof, one or two instances may be cited.

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\* Read at a meeting of the Douglas County Medical Society, Tuscola, Ill., Oct 18, 1910.

The secretary of the California State Board of Health says:

"We object strongly to this class of poor coming to the state and have issued warning many times. We do this because we believe it is the worst thing they can do. While our climate is as good as any on earth for consumptives, it is impossible for them to live on climate alone. They come without money, hire cheap rooms which are often dark, and live on a small fraction of what they should. The result can only be one thing—death, and the death roll from tuberculosis in this state is increased very much by this class of people."

The superintendent of public health of Arizona says:

"The attitude of the people may be possibly described as passive hostility toward this class and one of charity toward the individual. No official warnings have been issued against the practice of physicians of the north and east in sending these cases to our territory, but none of us who lives here and realizes the conditions and the hardships enforced on these unfortunates ever fails to let his voice be heard in protest when the occasion is presented."

The secretary of the Board of Health of New Mexico says:

"We have no appropriation to get out printed matter that we should to warn this poor class of consumptives, of whom we have many, away, and the poor devils, when they spend the few dollars they bring with them, call on the people of the territory to be either sent home to die or to be buried here."

The secretary of the State Board of Health of Texas says:

"Our people do not like for poor consumptives to come into Texas. No official action has been taken except that we exclude them from coming in from Mexico and if tuberculosis residents of one Texas county become stranded in another Texas county they are returned to their home county at state expense. We have inserted a warning card in the *Journal of the American Medical Association* advising the physicians of other states that we do not want their indigent or hopeless cases."

Only recently the Oklahoma State Board of Medical Examiners, while suffering from a most malignant type of phthisiophobia, decided it would no longer issue licenses to consumptive physicians. It might be of interest to know how many of the members of this board are possible consumptives and if they advocate or contemplate cancelling the license of a physician if he unfortunately becomes infected. Such a plan would inevitably deprive the profession of many of its most valuable and zealous workers. The action of the Oklahoma Board reaches the dignified height of "simple foolishness," and should arouse the indignation of every self-respecting member of our profession. If the doctors are to become victims of this phobia, what is to be expected of the consumptive and the general public?

To-day the average poor consumptive no longer lives a life of hopeful expectancy and dies a hallelujah death, as he formerly was supposed to do, but instead, he ekes out a miserable existence, too often shunned and abandoned by family and friends. While no one would wish or choose the lot of the justly punished poor Philip Nolan in "The Man Without a



Country." nevertheless, it is much to be preferred, when compared with that of the average consumptive. That there are enormous risks and dangers associated with tuberculosis all will admit, conditions which should not be minimized but equally truly ought not to be magnified. In the first place it is to be distinctly understood that precaution, founded on our present knowledge, is entirely separate and distinct from fear, without reason or foundation. In the past, when disease, epidemics and famine, were considered as the reward for evil, fear was the predominating element. At a later period with more definite idea of cause and effect, there appears the element of precaution; at first most pronounced with those diseases accompanied with visible manifestations but practically always present. More recently, with the demonstrated bacterial cause of disease, the previous condition of fear, instead of diminishing or giving way to precaution, has continued and in some instances even increased. Generally, we fear an unknown danger, and our fear is in direct proportion to our ignorance. A known danger or risk by precaution is avoided, while fear may be entirely absent. Fear or cowardice is an inheritance of the dark ages, the result of misunderstanding or ignorance, and when present is a serious reflection on our present knowledge. Precaution is a natural result of increased knowledge and bears the same relation to fear as day does to night.

The consumptive, while the chief offender, is generally the chief sufferer. He may suffer from the fear that he has consumption but his real suffering often dates from the time he becomes aware or is informed that he has the disease. This is in part due to the fact that he knows he is afflicted but in greater part because of the hardship thrust upon him as a result of the fear in others of his condition. Oftentimes in the dispensary work patients have requested that the nurse should not call or the people where they lived not be informed, otherwise they would have to move. We all can recall patients and even physicians who would not consent to a physical or sputum examination for fear of the result. Nearly every physician has been requested by the father, the mother or some member of the family not to inform the patient if a tuberculosis be found. The justification of such a course is attempted on the supposition that if the patient is told that he has tuberculosis he will be deprived of hope and courage. No conscientious physician will lend himself to any such scheme to deceive. To accomplish the best results for the patient and his relatives or associates, it is necessary to secure his cooperation and this can only be done by obtaining his confidence. To inform a patient that he has a "bronchitis" or a "tendency to tuberculosis," when there is an unquestionable tuberculosis, is not only a gross injustice to the patient but also to his family, friends and the public. Experience may indicate, in certain instances, that it is better policy to inform the patient of his actual condition after the first or second examination. The result will also depend upon the manner in which such information is given. It is quite the rule that a certain degree of depression or fear be present for a short time following the first information but it soon disappears, especially with the least indication of improvement. Not

infrequently after an individual has contracted tuberculosis, the fear which he previously possessed, quite suddenly disappears; he does not consider himself as dangerous and cannot understand why others should so regard him.

The amount of phthisiophobia among physicians is surprising, sufficient for special comment and wonder. Why this should be so is difficult to understand. The physician is far less exposed to infection than the nurse, the relatives or associates of the patient; he knows the dangers and can guard against them by intelligent precaution, but, nevertheless, is often the subject of phthisiophobia. There are physicians who so fear the disease that they will not attend consumptives in either their private practice or hospital service. Among the members of the resident staff of public general and consumptive hospitals the fear of the disease is well pronounced. Too often the consumptive service is fortified, neglected or completely ignored; a valuable experience being lost and the patients compelled to suffer an increased hardship. In other respects the physician is directly responsible for much injustice and hardship to which this class of patients is subjected. Of these there should be mentioned the failures in diagnosis; some of which consist in regarding advanced cases as moderate or incipient. Too often well developed cases are diagnosed almost anything but tuberculosis. The general complaint from the tuberculosis camps, sanatoria and hospitals is the lack of early diagnosis, and, undoubtedly, this is in great part accountable for the partial failure in the treatment. The demand for an early diagnosis has led to the employment of various aids, chiefly, tuberculin in some form. There can be but little doubt of its utility as a diagnostic aid, but, a special warning is necessary at this time. Because of the ease with which one of the local tests may be performed, it has become almost a routine, whenever tuberculosis is suspected. A frequent error arises from the difficulty in interpreting the results. Practically every adult will give a positive reaction but that does not necessarily indicate a tuberculosis requiring medical attention or treatment. It must also be remembered that an active tuberculosis may be present and fail to give a tuberculin reaction. At the very best a tuberculin reaction should be considered only as corroborative in connection with a careful physical examination. Relatively considered, a negative reaction in the adult is more valuable than a positive, while the relative value increases with the youth of the patient. Until this is learned and fully appreciated by the practitioner, mistakes will continue to occur. In this connection might also be mentioned the results of the tuberculin tests in animals, especially in cattle. Aside from the direct financial loss to the owner, amounting sometimes to his entire herd, a loss which in only a few instances is partially assumed by the state, there is produced in the public a fear of contracting a tuberculosis from the consumption of meat or dairy products, especially milk. Another offense to which the physician is directly accountable consists in giving the patient improper advice in reference to a change of climate. The day has long since passed when such advice as "go West" is sufficient or proper, and to do so, without due consid-

eration, is nothing short of criminal negligence. Unquestionably suitable climate is a great assistance in the treatment but climate alone cannot cure. Competent medical supervision, proper food and treatment, preferably in a sanatorium, are just as necessary as in a less favorable climate. To obtain these advantages sufficient financial reserve is absolutely necessary. Thousands each year are sent West or Southwest only to succumb more rapidly from home sickness or starvation. A visit to the localities frequented by the consumptives is necessary to obtain an adequate idea of the actual conditions, for only the power of a Dante could describe such an Inferno. The "lunger," as the consumptive is designated in the West, is not welcome. His money, if he is fortunate enough to possess any after paying traveling expenses, may make him desirable and tolerated until it is gone. Even with sufficient means he will experience much difficulty, for many of the hotels and boarding houses are closed to him. Expenses are high and to obtain employment suitable to his condition is only a dream of the physician who sent him. A glance at the "want list" in the daily papers, with the usual "consumptives not accepted," or a visit to the city park, post office, or public square, the usual congregating places, will convince one of the hopelessness of obtaining employment. There is nothing left for him to do but idle away his days and too often spend his nights in a gambling hall or saloon, where he squanders his last cent and becomes a public charge.

Among the nursing profession the fear of tuberculosis has become so pronounced as to render it quite impossible to secure the services of competent trained nurses for either private patients, hospital or camp service. This has resulted in the necessity of employing practical nurses, not in all instances competent or specially prepared for such service. In many instances these positions are filled by tuberculous nurses in either a convalescent or arrested stage of the disease, as they are disqualified to do general duty and they accept such positions rather as a necessity than by choice.

At this time when many members of the medical and nursing professions, when many of the patients and general public, are more or less afflicted with the fear of tuberculosis, some good may result by a consideration of the actual facts and conditions. This may be best accomplished by a brief review of our present knowledge of the tubercle bacillus as obtained from laboratory investigations and experiments; by the clinical study of the frequency of infection of those persons concerned in the care of the tuberculous and finally the determination of the frequency of new cases of tuberculosis in the inhabitants of a region frequented by the tuberculous. At first glance it might appear necessary to consider the as yet undecided contention of the portal of entry and possibly the dualism of the tubercle bacillus. From the present indications, there can be but little doubt of the existence of a distinct and separate human and bovine type of the bacillus. It also appears evident that both types may and do produce a human tuberculosis. As for the portal of entry, this is yet a debated question, but from the evidence, it would appear that it is more than probable that the infection may occur by either the



pulmonary or gastro-intestinal route, in some by one, in some by the other.

Of much greater importance, from our present standpoint, is the consideration of the viability of the bacillus and the question of body resistance. The chief means of distribution of the tubercle bacilli is unquestionably the phthisical sputum. It has been estimated that a moderately advanced case of consumption expectorates 7,500 millions of bacilli in twenty-four hours. Not long since the belief existed that the very breath of the consumptive was germ laden and infected the surrounding atmosphere, that the disease was spread by the winds, much like a miasm. The bacilli were supposed to be ubiquitous, and the only wonder was, that everybody did not die of the disease. How does this compare with the present knowledge? Investigations by many, especially Koch and Kitasato, show that the bacilli in pulmonary cavities or in expectorated sputum are at least to the extent of 50 per cent. already dead. They retain their staining qualities but are harmless.

Many investigators have exposed animals to the breath of consumptives or the air passed through or over phthisical sputum without producing any trace of the disease. Heymann's experiments with glass cabinets in which consumptives were placed are also instructive. Receptacles were placed at various distances from the patients during the act of coughing with the object of catching the droplets, which were later mixed with sterile broth and injected into the guinea pigs. He found that the zone of danger about the consumptive under ordinary circumstances does not exceed three feet. He also found that the duration of life of the bacilli when exposed to light was less than three days. These findings are in harmony with the results of others, as follows:

TABLE 1.—EFFECT OF DIRECT SUNLIGHT UPON THE TUBERCLE BACILLUS

Author	Conditions	Not Killed	Killed
Koch, 1890 ....	Tubercle bacilli .....	.....	Few minutes to several hours.
Feltz, 1890 ....	Tuberculous sputum in road dust exposed to sun.	About 140 days.	.....
Ransome & Del- epine, 1894.	Pure cultures dried on paper in thin layers.	.....	12½ hours.
Migneco, 1895..	Tuberculous sputum on linen and woolen cloth.	.....	24 to 30 hrs. virulence diminished in 10 to 15 hrs.
Gardiner, 1898..	Tuberculous sputum on : Sand .....	1¾ hrs. ....	
	Stone .....	2 hrs. 5 min....	
	Wood .....	24 hrs. ....	
Mitchell & Crouch, 1900.	Tuberculous sputum placed upon sterilized soil.	35 hrs. virulence diminished after 20 hrs.	45 hrs.
Jousset, 1900..	Tuberculous sputum exposed to dust and sunlight.	.....	4 hrs.
Annett, 1903...	Dried muco-purulent sputum in small masses about size of one expectoration.	2 to 24 hrs. ....	48 hrs.

TABLE 1.—CONTINUED

Author	Conditions	Not Killed	Killed
Cadéac, 1905...	Tuberculous sputum on a board. ....		24 hrs.
	Tuberculous sputum on glass plates exposed to artificial light. ....	24 hrs. ....	48 hrs.
Twitchell, 1905.	Tuberculous sputum exposed to direct sun rays. ....	1 hr. ....	7 hrs.
Di Donna, 1907.	Pure cultures ..... 6 days	6 days	8 days.
Koch, 1890.....	Cultures of tubercle bacilli exposed to dispersed daylight near windows. ....		5 to 7 days.
Ransome & Del- epine, 1894.	Pure cultures dried on paper in thin layers, exposed to air and light. ....		4 days.
	Same exposed to sunlight. ....		12¼ hrs.

The period of reproduction of the tubercle bacillus in cultures has also been determined. Strauss states that they fail regularly after eight to twelve months and usually after five to six months. Theobald Smith found the cultures dead after three months. According to these findings the expectorated sputum contains many already dead bacilli; that the exposure to sun light, as well as the decomposition of the sputum, readily destroys the organism, which assists materially the efforts of controlling the spread of the disease by carefully collecting the sputum as it is expectorated or the moist sweeping of the rooms occupied or frequented by the consumptive, as well as the moist sweeping or flushing of our streets.

Another consideration of importance is the result of inhaled dried tuberculous sputum or cultures. Tappeiner, Berthean, Veraguth, Weichselbaum and others employed the dry sputum; while Koch, Conet, Gebhardt and others substituted the dry pure culture. In the experiments practically all meet with failure. Flugge even denied the importance of the bacillus containing dust as a factor in the spread of the disease but considered the droplets containing bacilli, given off during coughing, as the dangerous element.

The failure in the experiments with dried sputum or cultures is probably due in part to the associated dangers, in part to the hygroscopic material which becomes mixed with the mucus of the respiratory tract or saliva of the mouth, which is not true with the droplets. With a normal naso-pharyngeal mucous membrane, relatively but a few of the inhaled bacilli reach the lungs. The larger percentage is swallowed and finally reach the gastro-intestinal tract where many are destroyed in the gastric contents or escape by the intestines. The few that are retained and taken up by the pulmonary or intestinal mucous membrane, when conditions are normal, find in the lymphatic structures, barrier after barrier, that must be overcome before they can produce any serious result. The proof of these statements is to be found in the study of the actual clinical conditions.

One of the first reports bearing upon the subject was made by Dr. Williams, of the Brompton Hospital, an institution for far advanced consumptives. In 1882, when his first report was made, the hospital had 240 beds and had been in existence thirty-six years. All members

of the staff were carefully traced, some of which served not less than six months and many for several years. Dr. Andrews has performed a similar study at the Victoria Park Hospital.

Their findings may be presented in tabulated form:

TABLE 2. BROMPTON, 1846-1882—VICTORIA PARK

	Number of Staff.	Number of cases of phthisis			Total Deaths from Phthisis.	Number of Staff.	Number of Cases of Phthisis.	Total Deaths from Phthisis.
		Before Admission.	During Stay.	Subsequently.				
Resident medical officers.....	4	..	..	..	12	1	1	
Clinical assistants.....	150	1	1	6	51	3	3	
Matrons.....	6	..	..	..	4	..	..	
Nurses.....	101 ?	..	1 ?	4	5 ?	255	1	1
Servants.....	32 ?	..	..	..	..	..	..	
Porters.....	20	..	..	..	34	1	1	
Secretary and clerks.....	9	..	3 ?	..	3	1	1	
Dispensers.....	23	..	3	2	3	7	..	
Chaplain.....	4	..	..	..	5	..	..	
Physicians and assistant physicians.....	29	..	..	..	1	31	1	1 ?
Total.....	377	1	8	12	14	402	8 (7?)	8 (7?)

Since 1882 the Brompton Hospital has increased its bed capacity to 458, necessitating an increase in the staff. This has been carefully observed by Dr. Williams and furnishes the basis of his second report which may also be tabulated:

TABLE 3. BROMPTON, 1882-1909

	Number of Staff	Number of Cases of Phthisis			Total Deaths from Phthisis
		Before Admission	During Stay	Subsequently	
Resident medical officers.....	11	..	..	..	..
Assistant resident medical officers.....	14	..	..	..	..
House physician and clinical assistants.....	181	..	..	..	..
Number traced.....	176	..	..	4	2
Porters					
Resident.....	56	..	..	..	..
Non-resident.....	79	..	6	..	3
Pathologist's assistants.....	4	..	1	..	..
Dispensers.....	23	..	..	..	..
Total.....	544	..	7	4	5

In his second report Dr. Williams does not include the nurses as many of them served but a short time, a period too brief to be of any statistical value.

A study of these reports, from a hospital for far advanced cases where frequent infections might be expected, reveals results rather surprising.

They also demonstrate the relatively slight danger of infection to those having the care of even far advanced consumptives. The frequency of infection among the porters again calls attention to the dangers of the fresh sputum. Of the total number, 136 resident and non-resident,



six became consumptive, of whom three died. Three are employed in destroying the sputum, sterilizing the linen and are known as sterilizing porties and the three deaths include two of these.

Saugman has studied the question of infection of medical men engaged in the care of the tuberculous and furnishes some valuable statistics. He applied to 112 institutions and received replies from sixty-five sanatoriums in Germany, France, Austria, Hungary, Switzerland, Norway, Sweden, Holland and Finland. From inquiries he found that very few of the doctors wore masks or took any special precaution during the chest or throat examination. Saugman does not include any doctor who had not resided and treated consumptive patients for at least six months. Out of the total number of 289, from whom he had positive information, 107 had been previously infected, while 182 were considered healthy. The average period of service for the previously infected 107, was three and one-half years and the period of observation up to the time of the report, 1902, was six and one-half years. Of these 107 old cases of tuberculosis, 16 died of tuberculosis, 9 still had the disease, 1 died of carcinoma and 73 had apparently recovered. The average period of service of the 174 healthy doctors at the time they took up the sanatorium work was three years and their after history was traced for three and one-half years. Of this number, two or possibly three, became tuberculous but all recovered, while five had died from other diseases and 166 remained well.

Saugman also reports on sixty-six throat specialists from eight clinics, from which he had definite and reliable information. One of this number was previously tuberculous, but, after seventeen years of active practice, was in good health. The remainder had been engaged in laryngeal work for four years and not one had developed a tuberculosis.

Saugman's report shows of the 174 sanatorium doctors, previously free from a tuberculosis, 2 or probably 3—1.78 per cent.—either during their service or subsequently, became tuberculous with later a perfect recovery, while not one of the laryngologist became infected.

Another means of estimating the danger of infection from tuberculosis is to determine the frequency of new cases in a region frequented by such persons. This task has been most efficiently performed by Dr. Gardiner of Colorado Springs and Dr. Munn of Denver. After a year of most careful investigation Dr. Gardiner found for a period of fifteen years, from 1877 to 1892, but six deaths had occurred from non-imported tuberculosis. During the following five years he continued his careful investigation and found five additional cases, four of which died, making total of ten deaths for twenty years. This number is so small as to appear impossible or incorrect, especially when we consider the large number of consumptives who go each year to Colorado Springs. It must, however, be remembered that from necessity and constant association with tuberculosis the physicians of Colorado Springs become especially efficient and Dr. Gardiner was unable to determine that more cases had occurred and passed unnoticed. Let us compare these findings of a region frequented by large numbers of consumptives, from all over the country, with the

findings of the ordinary large city. The average number of deaths yearly from consumption to each thousand of the inhabitants in most cities is three. According to the statistics Colorado Springs with a population of 20,000 inhabitants should have had, at the time of the report, an average of sixty deaths during the year from non-imported consumption. As a matter of fact only one such case occurred and only ten for the period of twenty years.

The observations of Dr. Munn, city physician of Denver, are almost as satisfactory. He found in the year 1895, sixty-four deaths from non-imported consumption in a population of 150,000, an average of less than one-half a death per thousand.

Although the previous reports are highly gratifying, they become even more so when compared with the findings in a general hospital accepting tubercular patients. The resident staff of the Cook County Hospital has been traced and the frequency of tuberculous infection determined as accurately as circumstances will permit. During the period of thirty-three years, from 1866 to 1909, three hundred and seventy-six have served as internes and each member, with the exception of the first three, has served a period of eighteen months. Until within the last year and a half, no attempt was made to segregate the tuberculous, but they were cared for in the general wards, not especially constructed for this class of patients and where no special precautions were enforced.

Of the 376 members of the resident staff, three had tuberculosis before their service, four during their service and thirteen have developed it since that time, making a total of twenty, of which six have died.

Accepting the validity of the preceding statements, the following appears evident:

First, The danger of infection in tuberculosis has been over-estimated and exaggerated.

Second, As a result, the tuberculous and the public at large have been subjected to great inconvenience and hardship.

Third, That the medical profession should realize the evils of these misconceptions and endeavor to correct them so far as possible; that physicians no longer continue to repeat many of the current stereotyped statements on tuberculosis, but to more nearly approach the truth as indicated by the knowledge of recent development.

Fourth, That the nursing profession should be properly instructed and trained in the care of the tuberculous.

Fifth, Since much of the fear of tuberculosis has resulted from the educational efforts of the various anti-tuberculosis organizations, it becomes incumbent upon them to continue their efforts and assist in diminishing this evil.

## ON THE ACTION OF IODIN ON THE TISSUES

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CHICAGO, ILL.

Ever since the discovery of iodine in 1812 by Courtois, a soda manufacturer in Paris, has its use been both varied and extensive. Its therapeutic value was highly lauded by such men as Veljean, Langenbach, Koch, Liebig, Bryant, Roux, and Mikulicz, and especially by the late Senn, who placed it as the most perfect of antiseptics, and always preached its virtues in his clinics.

The miraculous results derived from its administration in tertiary syphilis has justly placed it as one of our most potent drugs, but its value in other conditions, and especially its use in treatment of wounds, it seems is surely very much overestimated.

I have often seen how in operating for tubercular cervical adenitis, the operative field has been promiscuously swabbed with tincture of iodine, not only in the suppurative cases, but in those in which there was only the slightest tendency to "breaking down" of the glands. All these latter cases invariably suppurated. From my own experience, I know that most of these latter cases heal with primary union if treated only for a few days with hot moist dressings.

The local action of iodine on tissues has been studied extensively by several observers. Marchand and his pupils, Burner, Grutzner, Senn, Bohn, Menzer, and especially Heinz, have carefully experimented on the action of iodine on the tissues. The latter used iodine solution of 2 per cent. strength. By injecting 1 c.c. of this solution into the pleural cavity of middle-sized rabbits, he invariably produced adhesive pleuritis with a localized sub-pleural pneumonitis. Injecting 2 c.c. of the same solution into the peritoneal cavity, he found forty-eight hours later at autopsy extensive fibrinous adhesions in the injected area. These adhesions, he claims, were so strong that they could hardly be separated.

I also made a few experiments along this line, but the main object of this research has been to ascertain the action of iodine on the healing process of wounds. For this purpose, two wounds were inflicted on the back of dogs on each side of the spine, treating one with, and the other without, application of iodine. The wound treated with iodine always healed a great deal slower than the wound not so treated. In the experiments tincture of iodine was used.

**Dog 1.**—Male, grayish white; 8 kgm. June 15, injected subcutaneously 5 c.c. of tincture of iodine in left gluteal region. June 17, autopsy: slight necrosis along needle track; otherwise negative.

**Dog 2.**—Male, brown; 12 kgm. June 15, injected 5 c.c. deep into muscles of left gluteal region. June 16-18, injection repeated daily. June 19, dog found dead. Autopsy: extensive sloughing of gluteal muscles.

**Dog 3.**—Female, brown and white; 9 kgm. June 17, intraperitoneal injection of 10 c.c. tincture of iodine. June 19, autopsy: localized fibrinous peritonitis with easily detached adhesions.

**Dog 4.**—Male, grayish white; 12.5 kgm. July 21, back shaved. Two wounds and cut with dirty razor on each side of spinal column. Wound of left side



swabbed with tincture of iodine and covered with dry dressing. Wound in right side covered with hot wet plain water dressing. July 22, left side, wound open, grayish looking; right side, wound edges agglutinated, somewhat reddened. July 23, appearance about the same. July 24, left wound discharging pus; right seemingly healing with primary intention. July 26, about same. July 27, right wound healed. August 12, left wound healed.

DOG 5.—Male, black; 8 kgm. July 24, back shaved. Two wounds 6 cm. long cut on each side of back through skin and fascia. July 27, both wounds suppurating; left wound swabbed with tincture of iodine; right wound hot moist water compress; both wounds treated daily with wet dressings; left wound touched every three days with tincture of iodine. August 4, right wound healed. August 21, left wound healed.

DOG 6.—Female, brown; 10 kgm. July 25, back shaved; wounds produced as above; left wound swabbed with tincture of iodine; right wound, no treatment; wounds were untreated. August 20, right wound healed. August 25, left wound healed.

The experiments are few, but enough to at least throw some doubt on the value of the use of iodine in wounds. The interference in the healing process is due not only to destruction of tissue but also to the interference with local phagocytosis.

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## THE DEVELOPMENT OF THE THEORY OF HEARING \*

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CHICAGO

The earliest theory of hearing was that advanced by Aristotle in the fourth century B.C., the fundamental idea of which was that since the ear is the organ for the air sense there must exist in the head a reservoir of air to respond to the sound arising in the outer air. This theory persisted for over 2,000 years.

Modern theories of sound perception are based on the knowledge of the minute structures in the labyrinth. Two conceptions fundamental in our present day theories were evolved, however, several centuries before the discovery of the membranous labyrinth and the organ of Corti. These conceptions are, first, that sound perception is dependent on the vibration of structures in the labyrinth in response to sound waves, and second, that the perception of the various tones takes place in separate parts of the cochlea. Just what this vibrating structure is and the manner in which it responds to the impulse of sound waves constitutes the nucleus of the various theories of hearing.

Before the discovery of the membranous labyrinth it was usually assumed that the osseous lamina spiralis, a bony shelf which forms a partial partition running through the cochlear tube from the base to the apex, constituted the vibrating mechanism. Its varying width from one end of the cochlea to the other, it was supposed, made it possible for this plate to respond to tones of different pitch. Before the discovery of the membranous labyrinth the idea had been expressed that there exist membranous bands (nerve fibers) in the cochlea which take these sound

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\* Abstract of paper read before the Chicago Medical Society, Nov. 2, 1910.

impulses. Since the discovery of the organ of Corti all have agreed that the hair-cells are the structures in which the transference of the physical impulse of sound waves to nerve impulses takes place, and that these hair-cells are stimulated by an irritation applied to their projecting hairs. Some have assumed that these hairs receive their stimulation directly from impulses of sound waves passing through the endolymph. This hypothesis can readily be shown to be untenable and at present is not adhered to by any physiologist. The principle is accepted now that the stimulation of the hair-cells is dependent on an interaction between their projecting hairs and an overhanging structure known as the *membrana tectoria*. Helmholtz believed that this interaction was brought about by the vibration of the *membrana basilaris*. This structure, varying in width from one end of the cochlea to the other, Helmholtz believed, was able to respond on the principle of physical resonance in its different parts to tones of different pitch. All the modifications of the resonator hypothesis of Helmholtz and in fact all the theories of hearing that have been advanced since the time of Helmholtz have assumed that the *membrana basilaris* is the vibrating mechanism.

My own interest in the labyrinth was primarily an anatomic one. My interest in the physiology was aroused by the discovery of anatomic conditions which convinced me of two things: first, that the *membrana tectoria* and not the *membrana basilaris* is the logical structure for responding to the impulses of sound waves, and second that there are fundamental anatomic objections to any theory which places the active rôle of vibrating structure in the *membrana basilaris*.

My work, I believe, has established the fact beyond the question of a doubt that the *membrana basilaris* is physically incapable of performing the rôle of a vibrating mechanism, and furthermore that the *membrana tectoria* must be this mechanism. Just how the *membrana tectoria* responds to the impulse of sound waves is largely speculative since this is beyond possibility of actual demonstration. My conclusion regarding the manner in which this structure responds is arrived at by assuming that manner of response which best explains the various phenomena associated with sound perception both in the normal physiology of hearing and in the phenomena associated with diseases of the labyrinth.

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## THE DIAGNOSIS OF CANCER OF THE RECTUM\*

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CHICAGO

This paper is not intended to elaborate any technic of treatment because that is definite enough once the presence of the cancer is known. I wish, however, to call your attention to the clinical pictures of this trouble and to consider the different types together with the symptoms and degree of malignancy of each. I presume to take up your time with this subject because certain writers state that the diagnosis of cancer in

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\* Read before the South Side Branch, Chicago Medical Society, Oct. 17, 1910.

or about the rectum is easy and yet I see every now and then a growth which has progressed considerably without being diagnosed, although the patient has been in charge of careful and well-informed physicians. I am also free to confess it is always a source of anxiety to me in making a rectal examination to be sure that there is or is not a malignant growth present, because I am as fearful of erring one way as the other.

Cancer in the rectum is the most fatal and sometimes one of the most painful diseases we have to meet. Its exact cause here, as elsewhere in the body, is obscure. The theories advanced are so much at variance that the writer is not prepared to advance an opinion. Statisticians and pathologists differ considerably in their reports, but it is safe to say that the large bowel contributes about 95 per cent. of all of the cancers of the intestinal canal and of these 80 per cent. are found in the rectum and 15 per cent. in the colon. Cancer of the bowel is much more frequently found now than formerly, but this remark applies to cancer in general and is in a measure due to better diagnosis and more careful collection of cases.

As regards the location of the disease, cancer is most frequently found about three to five inches within the rectum, the lower limit of the growth being about on a level with the internal sphincter. Next in frequency is the region about the anus, and least frequently is the growth found in the upper rectum or sigmoid. The region extending up from the internal sphincter is not only the most frequent site, but also the most fatal because at this point the disease more rapidly runs its course and is more liable to accidents on account of increased anatomical dangers to obstruction. Williams estimates that there are forty cases of cancer within the rectum to three at the anus. The different proportions of epithelial structure and stroma in each cancer determines its degree of malignancy and also its physical characteristics.

At the anus squamous or pavement cell epithelioma is the rule and is the same form of cancer as is so commonly seen on the lip. It begins as a hard warty nodule just under the skin at the muco-cutaneous junction; not within the rectum. It makes slow progress and gradually develops an indurated base. From the beginning the skin is fixed to the growth and is not movable over it. The tumor is in the skin and does not spread to the deeper structures. Microscopically there is found the characteristic nests of squamous epithelium which invade the lymph spaces from the surface. The stroma is made up of fibrous and myxomatous tissue and is pretty well supplied with blood-vessels and inflammatory corpuscles.

The growth does not ulcerate until late in its existence. The ulcers scab over quickly but slough away beneath the scab and when the crust is removed the ulcer is larger than before. From the ulcer exudes a watery fluid. Around the ulcer develop other nodules and the tendency of the growth is to surround the anus and invade the perineum rather than to creep into the rectum. The indurated base that was first felt about the nodule is constantly widening about the other nodules and ulcers.



During the nodular stage of the cancer growth there is no pain and also as the growth invades the perineum it is not sharply painful. Most patients speak rather of an uncomfortable feeling or a soreness. If the anus is eroded, which, however, is rare, the pain is similar to irritable ulcer or fissure and begins as early as the growth pushes through the mucous membrane. The cancerous ulcer bleeds or oozes blood easily by abrasions but the hemorrhage is usually slight.

Having now seen the clinical picture of cancer at the anus let us differentiate it from other ulcerations of this region.

1. The lupoid ulcer begins at the same point but the ulcer is clear cut and bands of cicatrization develop. These bands break down shortly after they form but other scars form and clinically we usually find some of these bands. The ulcer spreads rapidly and sometimes involves the whole buttock. The edges of the ulcers are not thickened. The base of the ulcer is soft, but beneath it is a hard, indurated mass. Examination of scrapings will usually show tubercle bacilli.

2. The plain tubercular ulcerations differ from the lupoid in that they first appear as anal fissures. They may be single or multiple but as they spread they soon coalesce into one large ulcer. They are not painful. About the base of the ulcer is a dense fibrous layer which seems to limit the depth and so the ulcer may surround the anus without reaching the connective tissue beneath the skin. It is a singular fact that any dense scar will act as a barrier to the spread of the ulcer, probably because of the lack of blood-vessels.

3. Simple traumatic ulcers at the anal margin differ somewhat from similar ulcers on other parts of the body because numerous bacteria, inhabitants of the intestinal canal, abound in the skin of these parts. The ulcers are irregular in outline with red but usually sharp, flat edges which slope down to the base of the ulcer. The base is crater shaped with lots of granulations and generally freely discharging pus. This pus is foul smelling because of the many sudoriferous glands about the parts. The granulations bleed easily on wiping. The pain on defecation may be slight but is not acute.

4. Eczema about the anus is rarely of the papular type but is usually the erythematous form. In chronic cases the skin becomes dry and brittle and cracks on stretching. Beneath the eczema the skin is indurated but the hardening is in the skin and not beneath it as in cancer. The whole trouble is in the skin and moves with it. The ulcers if present are shallow.

5. Rodent ulcer. The edges of the rodent ulcer are hard and well defined. The ulcer begins in the skin and grows deeper and has few granulations. It begins on the skin about the anus and not at the mucocutaneous border as does cancer. The induration about the base of the ulcer is only moderate in amount in contrast to the wide induration about cancer.

6. Irritable ulcer or fissure. The cardinal sign of irritable ulcer is the sharp, lancinating pain at stool. The ulcer is located in and conforms

to the shape of a fold in the anal mucosa. It extends up to the sphincter grasp. It is shallow and the edges are inflamed, sometimes even thickened, but never indurated. If there is a tumor associated with the ulcer it is most likely the sentinel pile or the ruptured crypt of Morgagni.

7. Warts may appear at the anal margin but have no indurated base. Ulceration of the warts occurs only rarely and then usually in dirty subjects only.

8. Chancres. The most common site of chancres is in the skin just outside of the anal folds and the ulcer resembles chancres elsewhere. It is superficial and circular in outline but the induration at the base does not extend beyond the edges. The border of the wound is red but the center is dark gray. Chancres here are not painful.

*Cancers Within the Rectum.* The diagnosis of malignant tumors within the rectum is more perplexing. I have seen a distended urinary bladder and again a mass of impacted feces set a medical man worrying about a rectal tumor. These cases both of course were easily cleared up under their own appropriate treatment, but there are a lot of cases that are not so easily diagnosed.

The cancers here belong to the columnar cell growths and resemble the histologic structures of the mucous membrane from which they grow. They are adeno-carcinomas and closely resemble the benign adenomas: but the glandular hyperplasia of the simple adenoma is restricted to the mucous membrane and grows up into the lumen of the bowel, while the carcinoma infiltrates the submucous tissues and spreads out in all directions. Microscopically the resemblance between the groups of cancer cells and the tubules of the normal gland are so great that the tumor may be mistaken for a benign adenoma, but in the margin of the growth quite atypical cells will be found.

These adenomas may arise in the cylindrical cells which line the crypts of Lieberkühn and without any change in structure pierce the deeper layers of the rectum and produce metastases. Microscopical section of such tumor does not determine its character as to benignancy. Although these growths may be benign at the start the cylinder cells very soon proliferate in some part of the mass forming solid strings of cells. The goblet cells then disappear. Not all adenomas, however, are benign at first. Sometimes the cells become polymorphous and fill up the alveolar spaces and we have an alveolar carcinoma. The farther the cancer tissue is removed histologically from the normal the more malignant it is.

These cancers arise above the sphincter and are easily differentiated from the squamous variety. Early in its existence the growth may appear pedunculated, and clinically it is impossible to distinguish from simple adenoma until the tendency toward a broad infiltrating base shows the malignancy. Later ulceration occurs and inflammatory changes are superimposed: all being aggravated by the irritation of the feces. The cancer varies somewhat in gross and microscopic appearance and also in clinical history according to the histologic structure which predominates in the makeup of the growth. Thus although the same elements are used we find encephaloid, scirrhus or melanotic cancer,

The encephaloid cancer arises primarily in the crypts of Lieberkühn and is enclosed in a connective tissue capsule which sends trabeculae into the mass, dividing it into lobules. The cells are large, round and nucleated. It is often vascular with large veins coursing through it and on its surface. In the interior extravasations of blood give the tumor a soft, mushy feel and it resembles brain tissue in appearance; hence its name encephaloid. In other instances it is spongy and shreddy like placenta. Later a large amount of cancer juice containing cells exudes on pressure, and if dropped into water it quickly diffuses, giving the whole a milky appearance. Paget considers this a valuable rough test in diagnosis. If seen early the cancer is movable in the subjacent tissues, but when seen later it is soft and friable upon an indurated base. These cancers grow rapidly and may even fill the whole pelvis, involving the surrounding tissues while secondary growths appear in neighboring organs. The glands are involved early and if the tumor is removed it soon recurs although considerable temporary relief is obtained by its removal and the cachexia disappears for a time. Digital examination is deceptive because of the extreme softness of the tumor and the apparent fluctuation imparted, but a little fluid aspirated will clear all doubt by showing cancer cells and blood. As the deeper structures degenerate they become cystic with a mucoid, glue-like, translucent yellow substance, which distends the tissues and the growth is called alveolar or colloid cancer. Generally speaking it may be said that the softer the cancer mass the more rapid its growth and the greater its malignancy. These encephaloid cancers are the most malignant of the rectal tumors and are so friable that they bleed on the slight traumatism of an ordinary examination.

Scirrhus or hard cancer is the variety most frequently met in the rectum. It arises in the submucous connective tissue as a hard nodule beneath the normal mucous membrane and radiates out in various directions. These new extensions can sometimes be felt as hard bands or processes, claws, from which cancer receives its name. The cut tumor presents a cancer mass that is bluish-white and gristly with masses of fat and fatty tissue between the trabeculae extending out into normal tissue. The center of the mass is generally degenerated and if the tumor is cut the center retracts, making a saucer-like appearance. This has been called the cancer cup.

The scirrhus cancer is said to arise more frequently on the anterior wall of the rectum near the prostate, but it soon infiltrates all surrounding tissues and eventually involves the bladder. A circular stricture or collar forms about the rectum and as the lumen of the bowel is closed an intractable constipation appears. Complete obstruction of the rectum may occur and even rupture of the gut from fecal accumulations above the cancer has occurred. Blood-vessels and nerves appear to be crushed out of the tumor and there is very little if any hemorrhage or pain.

Ulceration comes on late in the scirrhus cancer and as there is very little absorption or toxemia the cachexia comes on late also.

The diagnosis of scirrhus cancer is made by its hardness and contractility, but its history is often necessary to differentiate it from simple



fibrous stricture of the bowel. This latter may exist for years with no other symptom perhaps than the intractable constipation. Kelsey reports a case of dysenteric diarrhea which resulted in a stricture and presented a typical clinical picture of scirrhus cancer that had existed for eighteen years. Histologically the scirrhus cancer stroma is abundant and the alveoli narrow with the cancer cells frequently small. Fatty degeneration of the cells often occurs but the stroma remains to contract. Secondary metastatic growths occur late and there is hope of a cure by early and thorough excision.

Melanotic cancer is rare within the rectum and its histologic relationship is not clear. It is classed as a carcinoma by certain pathologists and as a sarcoma by others. It is soft and medullated and has an increase of pigment. It is rapid in growth and very malignant and often becomes generalized. Only ten cases have been reported and only six of these had complete histories. Five were men and one a woman. The ages varied from 45 to 64. Microscopic examinations were made in five cases and these were all classed as sarcomas. The symptomatology was the same as any rectal cancer with the exception of one case where the stools were black, and also after making an examination the finger was blackened.

For all practical purposes we have within the rectum the scirrhus and encephaloid cancers only. Let us consider with what these tumors each are likely to be confounded.

*Symptoms.* Cancer within the rectum begins insidiously and often gains so much development before the patient is aware of its significance that it is beyond hope of a complete cure. He supposes he has hemorrhoids or some other simple rectal ailment and dismisses it from his mind because he objects to an examination. The mild character of the symptoms during the early stages is peculiar to cancer situated above the middle of the internal sphincter, because the bowel has very little sensitiveness and considerable growth and even ulceration may exist without causing much uneasiness. But if the disease is below the sphincter there is great pain and the suffering itself may be of assistance in making an early diagnosis.

One of the first signs of trouble is a sense of fulness within the rectum or a feeling as if something is retained in the rectum after the bowels have moved. Later there is a tingling soreness after evacuation much the same as occurs ordinarily in healthy people after the passage of very hard fecal masses. Later both of these symptoms are associated with straining and bearing down when the sufferer has an evacuation and if the disease is near the anus this straining is sometimes violent.

With this sense of fulness in the rectum and the pain of each defecation there develops a slight morning diarrhea or sometimes there will be several exactions of mixed feces and mucus. When the sphincter is invaded the rectal wall is stiffened and the sphincter muscle is weak and partial incontinence exists. When sloughing extends into the sphincter complete incontinence occurs and in the encephaloid cancer particularly a sanious discharge containing shreds of broken-down cancer tissue escapes more or less continually and excoriates the anus and skin about

the parts. This discharge has the odor of decayed flesh and once recognized is never forgotten. It is similar to the odor of cancer of the uterus.

The ulcerations of the cancer that produce the fetid discharge are of two kinds, that above the stricture and that of the growth itself. Ulceration developing above the growth differs from the cancerous necrosis in that it is superficial, has a clean, smooth base and low, even edges. It results from pressure of and toxins absorbed from the retained and hardened feces that are lodged in the dilated portion of the rectum immediately above the obstruction. When this obstruction is relieved these masses are found to be dry and of almost stony hardness and seem imbedded in the tissues and, if removed, leave ulcerated spaces beneath them. This form of ulceration we usually find in the scirrhus cancers.

In the encephaloid growth the ulceration is different. Early in the disease the normal mucous membrane covers the mass but the cancer soon breaks down. This degeneration may occur at one or several places simultaneously and the mucous membrane may be honeycombed with ulcerating spots through some of which the cancerous mass protrudes. Ulceration begins at the central or denser parts of the cancer and is not limited to the superimposed mucous membrane but invades the deeper structures and in some cases extends to neighboring organs. The bladder is frequently opened and cystitis or a urinary fistula produced, the urine escaping through the rectum while the feces are sometimes forced into the bladder and through the urethra, causing excruciating pain. This is one of the most urgent indications for colotomy. When the prostate or urethra are involved obstruction to urination begins. Smith records a case where the disease opened into the hip joint.

While the center is degenerating the periphery is advancing into new tissue. Around the edges the growth together with the inflammatory reaction raises the borders and gives the ulcer a crater-like appearance. The muscular tissue seems to have a greater resisting power and prevents somewhat the extension of the ulcerative process. The extension, however, progresses irregularly and creates a ragged edge. Gangrenous shreds of tissue are cast off and these have a very foul odor. As cicatrization occurs the rectum grows shorter until it may be only one-half to one-fourth its normal length. This contracting and the associated loss of fat about the parts produces the funnel-shaped anus so pathognomonic of cancer.

With this sense of fulness in the rectum and the pain of each defecation there develops a slight morning diarrhea or sometimes there will be several evacuations of mixed feces and mucus. Later in the encephaloid cancer a sanious discharge containing shreds of broken-down cancer tissue escapes more or less continuously and excoriates the anus and skin about the parts.

The encephaloid cancer is prone to bleed because it breaks down so easily and so early. When mucus and blood are expelled it shows the presence of ulceration. This condition is found in 90 per cent. of all cases of encephaloid growths. The hemorrhage occurs frequently and is usually slight but its persistence produces anemia and this is an element in hastening the end. In the soft cancers there may be a discharge of

free blood which rapidly weakens the patient but the scirrhus growths bleed only sufficiently to smear or streak the stool if they bleed at all.

Obstruction of the bowel is a variable symptom. Sometimes an advanced scirrhus cancer which has narrowed the lumen of the rectum until it will hardly admit the end of the finger will still cause the patient very little obstipation. When the obstruction is located in the lower end of the rectum or at the anus the feces may be ribbon-shaped or small pea-like balls or the frequent efforts at defecation may bring away small particles of feces mixed with mucus and pus. The clinical picture of the obstruction is similar to that of simple benign stricture and not in any way pathognomonic of cancer. The patient's history does not differentiate the disease and all depends on a physical examination which requires great care and delicacy. However, cancer in this region is of rapid growth and if a patient asserts that the stricture has existed for many years it is evidently not malignant, but it must be remembered that carcinoma may be engrafted upon any benign growth or ulceration.

In the encephaloid cancer the passage of the feces is not so frequently interfered with because ulceration begins early and the growth sloughs away enough to keep the passage open. Blood, mucus and pus mixed with the feces suggest a dysentery instead of the real disease. Ulceration into the surrounding tissues with the production of an abscess and fistula allows the extravasation of feces and often a large dissecting abscess.

*Examination.* The digital examination is of great value in all rectal strictures and in cancer it is absolutely necessary. Mikulicz found three-fourths of his cases of scirrhus cancer had formed a stricture when first seen. Gussenbauer estimates that 65 per cent. of all rectal cancers are of this variety. These cancers grow lengthwise of the bowel very slowly and rarely involve more than two inches.

Cancers high up in the rectum and in the sigmoid are the most difficult to diagnose and have been repeatedly mistaken for diseased ovary or other pelvic tumors.

Encephaloid tumors contribute 15 per cent. of the rectal cancers. They break down very early and with few exceptions have reached this ulcerative stage by the time they are seen by the physician. By palpation irregular masses appear to have been broken off roughly and the raised edges of the ulcer give it a crater-like appearance. The finger being well anointed and inserted feels this rough, irregular edge and then passes beyond the constriction into a wider channel where frequently masses of hardened feces are found. Every possible care must be taken in passing the finger through the obstruction when it surrounds the rectum, especially if near the peritoneal surfaces, for fear of tearing through the friable wall and entering the abdomen. The necrosis may leave a very thin partition at some point or the ulceration in the bowel above the obstruction may be very deep. The finger must never be pushed hurriedly through a carcinomatous stricture and even soft bougies must be used with great caution. Numerous cases of rupture and sudden death have resulted from carelessness in making an examination.



*Differential diagnosis.* The scirrhus cancer must be differentiated from other fibrous masses within the rectum.

The congenital stricture is frequently unobserved until the child eats solid food and the stools are formed but it is almost always found before puberty. The symptoms are those of obstruction in an otherwise healthy child and of long standing whereas the carcinoma does not occur until adult life.

Benign fibrous stricture is the most difficult because sometimes it is impossible to differentiate although its surface and edge are smooth in contrast with the cancer, which is irregularly nodular and rough. Of course the history of the case is entirely different.

The encephaloid cancer may be mistaken for the benign adenoma or papilloma which occur quite frequently, and are important because they are sometimes very difficult to diagnose and so frequently carcinomatous changes occur in the benign tumor if it is left *in situ* or a cancer recurs when the apparently benign adenoma or papilloma has been removed. These tumors are sometimes attached by a pedicle and even if they have a broad base it is never indurated. Inasmuch as these tumors are so liable to contain malignant cells or to develop malignancy later I never place much credence in laboratory findings of bits removed from the tumors because part of the tumor may be benign and another part be malignant.

Syphilitic lesions in the rectum may be mistaken for cancer. Particularly the encephaloid cancer. Chancres are very rare above the ano-rectal line. Mucous patches occur about the same time as the macular eruption on the skin. Both of the lesions have a tendency in ulcerating to follow the blood-vessels and lymphatics so that the ulcer spreads upward rather than laterally. There is considerable discharge of that peculiar chancre smell. It is very different from carcinoma.

Gummata begin in the connective tissues and if seen early the mucous membrane is free above the tumor, which is round and elastic. They may be as large as an orange. Later they undergo fatty degeneration and ulcerate and the cicatrix may cause stricture.

In the proliferating proctitis fragile villous teats hang from the mucous membrane. There is an abundant discharge of mucus. The granulating mass is soft and its base is limited to the mucous membrane but does not infiltrate below. The growth spreads all over the rectum but is not limited to one part.

This gives the reader a general picture of the clinical features of cancer as found in the lower part of the large bowel, and will assist in a clear and early comprehension of this dread disease. What course of treatment shall be adopted depends upon many things and the surgeon must decide whether his treatment shall be removal with a hope of lengthening life and perhaps curing the patient, or shall it be simply alleviation of suffering? If the entire mass and sufficient perirectal tissue can be removed, the prognosis is relatively good, but in advanced cases the prognosis is bad regardless of the operation.

# ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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MARCH. 1911

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## THE SUPREME COURT AND THE ITINERANT VENDER

On Feb. 25, 1911, the Illinois Supreme Court rendered a decision declaring invalid that provision of the medical practice act which requires itinerant venders of drugs and nostrums to pay a license of \$200 a year.

"The majority of the court holds that the law is invalid because it undertakes to discriminate between the established dealer in medicines and the one who travels about. No such distinction, the court holds, can be forced under the constitution. Justices Cook and Dunn file a spirited dissent in which they hold that putting a heavy tax on itinerant venders of drugs and nostrums is a proper exercise of the police power of the state. Even if the license were made prohibitory, they say, it would not do violence to the right of the state to protect the health of its citizens.

"The decision is given in the case of the State Board of Health against J. A. Wilson. The minority opinion refers to the fact that the defendant was selling a remedy which was extravagantly advertised as a 'cure all,' and insists that the board of health ought to have authority to curb the operations of such venders."

Not the least interesting part of this court ruling is the fact that in the Bulletin of the Illinois State Board of Health for October, 1910, appears the decision of the court dated Oct. 28, 1910, in which it appears that the act was sustained *in toto*. Much credit was taken by the secretary for the action of the court. Among others congratulating the

secretary was one B. D. Harison of Michigan. On calling up the clerk of the supreme court, we learn that the decision of February 25 has to do with the same case, namely, the State Board of Health vs. J. A. Wilson, and that the court had reversed itself on a further hearing of pleas by the interested attorneys. We withhold further comment on the peculiar circumstances surrounding this decision, and in the meantime wonder where the State Board of Health comes in and what shall be done with the congratulations showered on it for securing the widely heralded decision of October 28.

### LEGISLATIVE MATTERS

In order that our members may be kept informed regarding the status of the legislation affecting the medical profession, we are issuing the March JOURNAL early, and Dr. L. C. Taylor, chairman of the Committee on Legislation, has furnished an abstract of all bills which have been introduced since our February issue, and will make recommendation of what action should be taken by the individual and component societies of all state organizations.

With reference to the bill requiring medical examination prior to the issuing of a marriage license, we might say that this matter has received favorable consideration at the hands of the Indiana legislature, and is very likely to become a law. At least five states are considering the subject and of course Illinois will not be behind in paying attention to this very important matter. The following doggerel contributed to the *Chicago Tribune* gives a line on the attitude of the ordinary layman regarding this sort of legislation. It only serves to emphasize what we mentioned in our last issue, viz., that the position of the profession should be clearly understood and that no monetary motive should influence us in the passage of the bill.

#### DAN CUPID REGISTERS A KICK

[Indiana Legislature Passes Bill Requiring Marriage License Applicants to Secure Physician's Health Certificates.—Newspaper headlines.]

"In that romantic, grand old state,  
Who ever thought I'd meet such fate?  
Put on the shelf and virtually retired!  
I don't know how I'll stand the shock  
When ousted by the sawbones doc,  
And told, 'Get out, you little Dan; you're fired!'"

"Suppose two young things take a walk,  
Dive deeply in the soft stuff talk,  
And he declares she must be his for life.  
He'll lose his wild, ecstatic thrills  
When told by crude old Dr. Pills:  
'Yer spavined, kid; fergit about that wife!'"

"That law I never will obey!  
I'll get around it some old way,  
And keep on shooting arrows just the same.  
Such laws are nearly always broke;  
They're like that other funny joke  
That 'rules' blind tigers and the gambling game."

Q. S. A.



We have been asked to call the attention of our members to a bill for an act To Provide for the Creation of Public Recreation Districts, in which some of our members are interested, and which undoubtedly has many points of value to those citizens desiring to provide suitable grounds, buildings and apparatus for the purpose of physical culture of the rising generation. This bill was introduced in the House by Mr. Pearson, on January 25, and was referred to the Committee on Parks and Boulevards. The intent and object of this bill is to influence and promote healthful indoor and outdoor recreation for the people of the district organized. Dr. C. E. Earle of Des Plaines has issued an appeal on this subject and will be glad to confer with any one interested.

Another matter of great importance is the movement looking toward the rehabilitation of the medical department of the University of Illinois. This movement has been endorsed by a large number of physicians and several medical societies, and we believe will commend itself to all those interested in the uplift of the profession.

President James has sent out a large number of letters to individuals, and we trust that there will be a universal response to his letters. Besides those mentioned, there are a number of bills in which the profession should take an active interest, and they should also be watchful of the newspaper columns in the next few weeks for surprises in the way of legislation of all sorts. The senate has passed a joint resolution calling for a final adjournment on April 6, and should the house concur, what legislation is attempted will be sprung suddenly, and there may be an attempt to rush it through without giving those interested an opportunity to file objections. As announced in our February issue there is universal belief that a great deal of politics will be attempted by the various gentlemen interested in passing or failing to pass bills at this session of the legislature. At any rate we warn our members of the extraordinary state of affairs, and trust that our officials will not be caught napping should anything unusual be attempted.

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### LEGISLATIVE BILLS

47th G. A.

HOUSE BILL No. 55

1911

Introduced by Mr. Shepherd, January 24, 1911.

Read by title, ordered printed and referred to Committee on Live Stock and Dairying, when appointed.

#### A BILL

For an Act to prohibit the establishing and enforcing of the Tuberculin test for Dairy animals by any city, village, incorporated town, county or other corporate authority in the State of Illinois.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That it shall be unlawful for any city, village, incorporated town, county or other corporate authority in the State of Illinois by ordinance, rule or regulation other than may be established by the law of this State to demand, fix, establish or require the

Tuberculin test to be applied to Dairy animals as a means or measure of regulating and purifying milk, skimmed milk, cream and Dairy products of said animals in any manner whatever, and every such ordinance rule, by-law or regulation heretofore or hereafter passed, demanded, fixed, established or required by any such city, village, incorporated town, county or other corporate authority other than the State of Illinois, is hereby declared to be void and of no effect.

47th G. A.

SENATE BILL No. 235

1911

Introduced by Mr. Ball, February 23, 1911.

Read first time, ordered printed and referred to Committee on License and Miscellany.

## A BILL

For an Act to amend an Act entitled, "An Act to regulate the practice of medicine in the State of Illinois, and to repeal an Act therein named;" approved April 24, 1899, in force July 1, 1899, by adding two additional sections thereto to be known as Sections 2a and 6a.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That an Act entitled, "An Act to regulate the practice of medicine in the State of Illinois, and to repeal an Act therein named;" approved April 24, 1899, in force July 1, 1899, be amended by adding two additional sections thereto to be known as Section 2a and Section 6a.

Section 2a. The State Board of Health shall require that every applicant for a license to practice medicine and surgery in all their branches, in the State of Illinois (excepting only those physicians who may be entitled to a license under Section 3a of the Act to which this Act is an amendment) shall present proof satisfactory to said Board that he is a graduate of a medical college in good standing, as may be determined by the State Board of Health, and pass, before said Board, an examination embracing those general subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States; *provided*, that the State Board of Health may, in its discretion, admit to examination a student who has completed, in a medical college determined in good standing, the course of instruction required by the rules of said Board in medical colleges determined in good standing, and who has passed the examinations of said college, but has not received a diploma. And if said student pass the examinations of the said Board it may issue to him a limited license authorizing him to practice medicine and surgery in a hospital approved by said Board and in no other place whatsoever in the State of Illinois, which limited license shall remain in effect for a period not exceeding eighteen months from the date thereof, and the State Board of Health may then issue to the applicant the regular permanent license of the Board without further examination or fee, on condition that the applicant present a diploma from the medical college

in which he had completed a course, as prescribed by the rules of the said Board, previous to the issuance of the limited license hereinbefore mentioned, and otherwise complies with the requirements of the Board and with the provisions of the Act to which this Act is an amendment.

Section 6a. The State Board of Health shall have power to revoke, for the causes set forth in Section 6 of the Act to which this Act is an amendment, not only the certificates provided for in the said Act to which this Act is an amendment, but also the certificates of practice medicine issued in pursuance of and under the provisions of "An Act to regulate the practice of medicine in the State of Illinois;" approved May 29, 1877, in force July 1, 1877, and "An Act to regulate the practice of medicine in the State of Illinois;" approved May 29, 1877, in force July 1, 1877, and "An Act to regulate the practice of medicine in the State of Illinois;" approved June 16, 1887, in force July 1, 1887; *provided*, that no certificate shall be revoked until the holder thereof shall be given a hearing before the Board.

47th G. A.

SENATE BILL No. 140

1911

Introduced by Mr. Brown, February 1, 1911.

Read first time, ordered printed and referred to Committee on Sanitary District Affairs.

#### A BILL

For an Act to regulate the practice of optometry in the State of Illinois.

(This is a counterpart of the bills which have been introduced during former sessions of the legislature and has uniformly met with defeat. It provides that a board of five members shall be appointed by the governor to carry out the provisions of the act.)

#### SENATE BILLS INTRODUCED

S. B. 235 (Ball) amends the act regulating the practice of medicine to allow applicants, who are not graduates of a medical college, to practice medicine and surgery in an approved hospital for eighteen months. He may then be given a permanent license without further examination, provided his college issues him a diploma.

S. B. 246 (Curtis) amends the law in relation to coroners, to give them entire charge of all unnatural deaths. Only coroners are authorized to issue a death certificate. Violation of this act is punishable by a fine from \$25 to \$5, or by imprisonment of thirty days or both.

S. B. 247 (Curtis) increases yearly salaries of coroners as follows in addition to their fees: In counties more than 25,000 population, \$600; 40,000 population, \$850; 50,000 population, \$1,000; 60,000, \$1,250; 75,000 population, \$1,500; 90,000 population, \$2,500. Coroner is allowed \$5 per day and expenses in holding inquests, in addition to five cents per mile mileage and is authorized to employ a physician in such cases at a salary of from \$10 to \$25 for such cases.



## STATE BOARD OF HEALTH FEES

On page 27 in the January issue of the JOURNAL we called attention to the fees collected by the Illinois State Board of Health, for which no accounting has been made to anybody of the amounts collected and how they were expended. We therefore were not at all surprised when the attorney general on February 16 rendered a decision which put the board out of business as far as the expenditures thus irregularly collected was concerned. The board was found to be in the same predicament as the game department, the grain inspection department and a great many others which have been for years acting contrary to law and common sense in collecting and spending money. When this whole matter clears up it may be possible to find out how much the board has been handling each year in this manner.

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NOTICE

WANTED: The following numbers of the ILLINOIS MEDICAL JOURNAL, for which a liberal price will be paid:

Volume 2, June and September, 1900.

Volume 4, February, No. 9, 1903.

Volume 5, July, September and December, 1903; April and May, 1904.

Volume 6, July, August, September and November, 1904.

Volume 7, February, 1905.

Volume 8, August, October, November and December, 1905.

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**Correspondence**

## MORE ABOUT CHRISTIAN SCIENCE

CHICAGO, Feb. 20, 1911.

*To the Editor:* Relative to Dr. William J. Robinson's special article appearing on page 215 of the February issue of the ILLINOIS MEDICAL JOURNAL, permit me to state my experience of twelve years ago. At that time I was employed by one of the trustees of a prominent Christian Scientist church<sup>1</sup> in this city, and thereby became familiar with some of their system. Before proceeding let me repeat two paragraphs of Dr. Robinson's article: "We are pictured as ignoramuses, grafters, butchers, anxious to operate whether there is necessity or not, drug dopers, etc., etc. We are denounced as a trust, monopoly, and any attempt of ours to organize to pass laws protecting health, is characterized as an attempt at class legislation, a desire for special privileges, inspired by our fear of the competitor, by our fear of the superior skill of our irregular rivals." "It is time that the medical profession change its tactics and assume a wideawake militant attitude. It is time that we actively attack error wherever it shows its head. By reading papers before lay audiences

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1. Frederick W. Peabody, LL.B., of Boston, has written an exposé entitled "The Religio-Medical Masquerade," well worth the reading by physicians.

(done in Chicago every Saturday evening), by participating in discussions, by writing to the newspapers, by refuting the false arguments of false prophets wherever they appear, we can do much toward destroying the influence of the quacks and the irregular cults, etc."

During my employment with this prominent business man, there were several attacks made on the Christian Scientists, and he was consulted about all of them. I learned that "The Sentinels" were a selected permanent paid committee whose entire duty it was to do as Dr. Robinson has stated, to attack error, to refute harmful statements, etc., whenever and wherever found, whether from the church members or from the various press clipping bureaus employed to send them such adverse news. They did this by the newspapers, magazines, and their official publications. Consequently all outsiders were ignoramuses, "not knowing whereof they spake. Nobody can understand Eddyism who is not in the Science."

This explains their dogmatic attitude to 'strangers to the cult, who undertake to criticize it.

The various local societies, the state societies, and the national association would do well to create such a "sentinel committee" for this express purpose.

The local members could draft papers, which should be read to their local or county society, and after proper corrections it could be ordered to be published. Or, if of great importance, it should be sent to the "national sentinels" for more complete data and widespread publication.

The old maxim, "large bodies move slowly," is bad for news that must be refuted while fresh in the public mind. Emergency surgery, quick action, is a necessity in this work, if the greatest benefits are to be derived. Repair the damage before sepsis, necrosis or deformity become deep seated.

Hoping these suggestions may help to agitate the question, I am,

Respectfully yours,

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Englewood, Chicago.

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ROSWELL, NEW MEXICO, Feb. 18, 1911.

*To the Editor:* I have in preparation for the columns of THE JOURNAL an article dealing with vaginal hysterectomy by the clamp method, and would deeply appreciate reports from those who feel an interest in this subject. It is needless to say that the fullest credit will in all cases be given. I am especially desirous of hearing from operators of modest experience, those who perhaps have from one to a dozen unreported cases, with suggestions as to improved technic and candid observations on unsuccessful cases. By the term "clamp hysterectomy" I mean an operation where a clamp or clamps are the main reliance for control of bleeding from the broad ligaments, the occasional application of a ligature to some especial point not invalidating the principal idea.

HOWARD CRUTCHER.

# COUNTY AND DISTRICT SOCIETIES

## COOK COUNTY

### CHICAGO MEDICAL SOCIETY

*Regular Meeting, Jan. 4, 1911*

A regular meeting was held Jan. 4, 1911, with the president, Dr. Alexander Hugh Ferguson, in the chair.

The President:—I am sure Dr. Ravold needs no introduction to this audience. He comes by special invitation to address us on a most interesting subject.\*

Dr. Ravold:—I wish to thank the secretary and members of this society for the honor conferred on me by this invitation.

The paper was discussed by Drs. William L. Baum, Julius Grinker, George F. Suker, K. A. Zurawski, and in closing by the author of the paper.

The President:—As announced, we have before us again the matter of the division of the fee. We have talked this over and over time and again, but still it comes out every so often, and in view of the statements which have recently appeared in the public press, it was thought that we should have it discussed here this evening. So, any of you who have anything to say, may say it.

Dr. Julius Grinker:—Inasmuch as this entire subject has, as the president says, been before us so many times, I can hardly see that we need take any more of our time discussing it, and I therefore move this resolution:

*Resolved*, That the Ethical Relations Committee be requested to investigate the case of anyone who is reported to be splitting fees or otherwise violating the well-known ethical laws of our society, and deal with them in accordance with our constitution. Carried.

Adjourned.

*Regular Meeting, Jan. 11, 1911*

A regular meeting of the Chicago Medical Society was held Jan. 11, 1911, with the president, Dr. Alex. H. Ferguson, in the chair.

Dr. John M. Patton read a paper on "The Treatment of Delayed Resolution of Pneumonia."

This paper was discussed by the president and the author of the paper.

Dr. Julius C. Hoag read a paper on "The Relation of Vasectomy to Eugenics."

The paper was discussed by Drs. Frank Lydston, T. J. O'Malley, K. A. Zurawski, and in closing by the author.

Adjourned.

### CHICAGO MEDICAL SOCIETY AND CHICAGO NEUROLOGICAL SOCIETY

*Joint Meeting, Jan. 18, 1911*

In the absence of the president, the meeting was called to order by the secretary, Dr. George F. Suker.

Dr. Suker:—This is the occasion of a joint meeting of the Chicago Medical Society and the Neurological Society. Dr. Ballenger will present some interesting cases which he has, after which Dr. D'Orsay Hecht will assume the chair and introduce the speaker of the evening. Dr. William L. Ballenger demonstrated cases of carcinoma of the larynx; partial and complete extirpation.

Dr. D'Orsay Hecht:—Members of the Chicago Medical and Neurological Societies: This, as you are aware, is the occasion of a joint meeting. We have had one such annually for many years. On behalf of the Neurological Society, I bid you welcome. I think, as neurologists, we need offer no apology for having selected for discussion the psychoneuroses, a subject which in late years has had

\* Dr. Ravold's paper on "Heredo-Syphilitics and Their Detection" appears on page 269. The discussion follows the paper.



an extraordinary fascination for all students in our field of work. Time was when the neurologist was almost exclusively concerned with the organic diseases of the nervous system. As concerns this, there has come a reversal of form, and now the pendulum has swung in another, in an opposite direction, and the neuroses, so called, have come into their own.

The conception of the neuroses—that group of nervous disorders supposedly without demonstrable structural change in the organic units of the nervous system—has of late undergone what we may safely call a radical revision. The earlier classification, a rather loose grouping of neurasthenia, hysteria and hypochondriasis, seems no longer tenable. The tendency now is to recognize actual neuroses and psychoneuroses. For this more satisfactory classification we are indebted to a small coterie of profound and earnest thinkers, chief among whom are Breuer, Freud and Jung. To Professor Sigmund Freud of Vienna belongs the distinguished merit of having produced a new theory relating to these nervous disorders, one based on careful observation and searching inquiry. The Freudian doctrine, as it has come to be known in a most extensive and worthy literature, declares the underlying potential factor in the development of every neurosis to be of sexual nature.

The program this evening, therefore, contemplates a discussion of the genesis of psychosexual impressions and repressions, their specific etiologic influence, the rôle of psychoanalysis in the interpretation of the symptoms and as a therapeutic agent.

For the widespread elucidation of Freud's work, which appears in its original form almost entirely in the German literature, we English-speaking physicians are indebted to our guest of the evening.

We of the Neurological Society feel that it is our special good fortune to have with us this evening a pupil and co-worker of Freud, a profound student in the field of philosophy, psychology and medicine; therefore admirably qualified to speak with authority about this more or less new order of things in our conception of the neuroses.

It also affords me much pleasure to add that we shall hear from Drs. Singer and Read of the application of some of this work in our own State Psychopathic Institute. We therefore acknowledge our obligation to these gentlemen, who, through their initiative, place us again in the forefront of this work as it may find application among the insane.

Ladies and Gentlemen, I take great pleasure in presenting Dr. Ernest Jones, Associate Professor in Psychiatry at the University of Toronto.

Dr. Ernest Jones, M.R.C.P. (Lond.), Toronto, Ontario, Associate in Psychiatry, University of Toronto; Director of the Ontario Clinic for Nervous and Mental Diseases, then delivered the address on "Reflections on Some Criticisms of the Psychoanalytic Method of Treatment."

Dr. Hecht: Inasmuch as these papers are all so closely related, I shall assume that it is the common desire to reserve the discussion until both have been read. I regret, however, to be obliged to announce that Dr. Read is incapacitated through illness and cannot be here, therefore it devolves upon Dr. Singer, Director of the State Psychopathic Institute connected with the asylum at Kankakee to present this portion of the program. I take great pleasure in introducing to you, Dr. H. Douglas Singer of Hospital, Illinois.

#### DISCUSSION

Dr. Sydney Kuh:—It is my intention to add somewhat to the paper read by Dr. Jones; in other words, to give some additional criticisms of the theories of Freud. I have no quarrel with the psychanalytic methods practiced for such purposes as those spoken of by Dr. Singer. I think that the abstract analysis which he read to you clearly indicates the value of that method in the study of certain mental anomalies. I regret, however, I cannot share his optimism so far as the possible therapeutic effects of that method of treatment is concerned. But I have a quarrel with Freud's theories, and I do not believe that Dr. Jones in his

paper has mentioned all of the possible criticisms. I do not believe the subject could have been presented in a better and clearer way than Dr. Jones has done, and I fully realize the difficulties in trying to criticize what he has said.

First of all, before going into a methodical criticism of the matter, I should like to take up one point which was mentioned in Dr. Jones' paper, namely: He attributes the unwillingness of those who do not believe in the Freudian theory and of those who are unwilling to take it up, to the fact that they are too prudish to discuss matters involving sexual questions, and he quotes as an instance of that tendency the disinclination of certain individuals to accept syphilis as an etiologic factor in tabes. With all due respect to Dr. Jones, I wish to say that this comparison which has been made by others in connection with this very question is a most unfortunate one, because these same individuals who denied that syphilis was an etiologic factor in tabes often in the same paragraph emphasize the importance of masturbation and sexual excesses as etiologic factors. However, that is ancient history. Let us come down to the present day.

There is nobody living to-day perhaps who is more active in that new science termed sexology than is Naecke. What Naecke has not written on the sex topic is hardly worth printing, and still Naecke only recently protested energetically against the Freudian theory, and declared himself, although not by any means prudish, utterly unable to accept the theory of Freud. My objection is to this part of the Freud theory. He claims that hysteria and psychoneuroses, so called, are the results of some sexual trauma in the broadest sense of that term. The influence attributed to sexual matters in the production of nervous phenomena is anything but new. In fact, it is a distinct return of what our forefathers were taught. Hysteria, of course, derives its very name from the fact that it was supposed to have its origin in sexual disturbances. True enough, but those who thought hysteria was due to some anomaly in the uterus or to unsatisfied sexual appetite never went as far in the definition of what constitutes the sexual element as does Freud. With Freud sexuality becomes so broad that it includes practically every human activity, and that is why it is possible for Freud to demonstrate in every instance that there has been some sexual trauma. I cannot follow him when he asks us to see in the sucking of the thumb of the infant an attempt to gratify an unconscious sexual craving. I cannot follow him when he tells us that enuresis in children is in the vast majority, if not in all cases, the result of sexual stimulation, even in the youngest children. (Let me say here that these examples which I am quoting are not taken from memory. They are taken from a work which has appeared within the last month or so, written by one of Freud's pupils, who says in the preface that the book was read and approved of by Freud, which amounts practically to Freud's endorsement of the statements therein.<sup>1</sup>)

I cannot follow Freud when in his interpretation of dreams he goes so far as to say, for instance, that to dream of a room ("Zimmer," in German) involves a sexual element because "Frauenzimmer" in German means woman. I cannot follow him when he says that to dream of an umbrella involves a sexual element, because it symbolizes an unfolding, as he puts it, which occurs with the erection of the penis.

Originally, Freud's theory was that the cause of the psychoneuroses and hysteria was a sexual trauma pure and simple. He did not go beyond that originally. In the course of years he has been compelled to modify this theory. He says—and he is perfectly correct—that no scientist need be ashamed to modify a theory; any man who is honest will often be compelled to do that, but, mark you, how in correcting his theory he has constantly weakened it. The first modification to be made was this: that the sexual element alone is not sufficient to produce hysteria or psychoneurosis, but it takes something additional. He finds now a toxic element. Again, according to his early writings, the trauma which produced the disturbance usually occurred at about the age of puberty. It was known long before Freud was made famous through his writings that in very many cases—in the vast majority of cases—of hysteria or psychoneuroses, marked anomalies

1. Freud's *Neurosenlehre*, Dr. Edward Hitschmann, 1911.

existed very early in life, and that before the age of puberty there were distinct evidences of an abnormal mental state. The neuropathic predisposition showed itself before the age of puberty; consequently, Freud is again compelled to modify his theory and to say, no, I was wrong when I said the sexual trauma occurred at the age of puberty; it occurred at an earlier period, long before puberty, and that he may have something to base this modified theory on, he is compelled to see in the sucking of the thumb and other childish acts the evidence of an ungratified sexual instinct. Now, the sucking of the thumb was explained long before there was ever a Dr. Freud, and it was explained in a most satisfactory way. Still later there is another modification of his theory. In drawing so broadly the lines of what constitutes the sexual element or a sexual trauma, Freud found himself facing this proposition: if what he designates as sexual trauma is really that, there is no individual who has not early in life suffered a sexual trauma. Again, a modification of the theory becomes necessary, and Freud is driven to acknowledge that back of it all as the real cause of hysteria and of these psychoneuroses is what he terms the psychosexual constitution. In other words, he goes back to the thing we knew long ago, that in those individuals who by heredity are defective there is very often, perhaps in the majority of cases, a certain degree of anomaly in the sexual life. Freud asserts that one of the important sexual traumas, the one which is very often responsible for the production of these disturbances, is excessive masturbation. That is distinctly a step backward. Take the text-books of thirty years ago on mental and nervous diseases and on the pages devoted to the discussion of the etiology, you will find excessive masturbation mentioned as one of the important factors. Long before Freud began to teach we learned that excessive masturbation, as a rule, is not the cause, but the result of nervous disorders. That is the same neuropathic predisposition which leads to excessive masturbation which later on is responsible for the development of the psychoneuroses.

Again, he claims that premature ejaculation may constitute a trauma of this kind. Of course, the same thing applies to that. Premature ejaculation is not a disease, but a symptom. It is the result of a disease in the majority of cases, just as is excessive masturbation. In some of his writings Freud explains the development of these troubles by assuming a sexual hyperesthesia, his psychosexual constitution. In other parts of his writings he wants us to believe that the average hysterical woman is sexually anesthetic. I will simply appeal to the experience of anyone of you who has to do with hysterical women, and I presume you all have, and it will not be necessary to discuss that theory any further.

Now, if we analyze all this we will come to this: the fundamental thing is not what we call the neuropathic predisposition, but we have a new name, namely, the psychosexual constitution. Taking the definition of sexual life so broadly that it involves practically every human activity, there is absolutely no trouble in finding with this definition that some sexual factor has been active in causing certain symptoms. It is not, however, possible, so far as I can see, according to the latest modified Freudian theory, to see in sexual trauma the real cause; but for the real cause he goes back to the same old thing we have known for a long time, only under another name.

Dr. Jones has spoken of those who think that possibly suggestion may have something to do with the result of psychoanalysis with considerable contempt. So do the others who believe in the Freudian theory. They simply ridicule the idea, and still Freud himself says that when in a case of this kind you wish to make a psychoanalysis it behooves you to emphasize to the patient the necessity of mentioning and discussing anything and everything that comes into their mind, though it be embarrassing. When you are addressing a woman, if that is not suggesting to her that sexual matters are to be brought forth, then I do not know what suggestion means.

Now, it has been the history of hysteria and the allied neuroses that every little while some new method of suggestion comes up—hypnotism, mental therapy.



electricity, hydrotherapy, rest cure, work cure, etc., and each and every one has its enthusiastic advocates, and each and every one has its brilliant results. It is new, the man who uses it thoroughly believes in it, and his enthusiasm, consciously or unconsciously, is transmitted to his patients, and his patients are cured.

From what I know of the subject—and I will confess my knowledge is based largely on reading, although I have had some practical experience with the method—the psychoanalytical method, so far as it applies to hysteria and all the psychoneuroses, depends entirely for its results on suggestion, in spite of what Dr. Jones may say, and I believe that as a method of suggestion it is not the easiest and it is not the best one.

Dr. Jones himself has spoken of the possible dangers. He has said that any method may become dangerous in the hands of those who are unskilled. He has in a measure, confessed that it is a measure that may do harm even in the hands of those who are skilled. That is true. We have nothing in therapeutics which we can use without a certain amount of danger. The question is whether the dangers involved by the use of this or any other therapeutic measure are possibly greater than the dangers involved by permitting the disease itself to continue. From my limited experience, I should be inclined to say that psychoanalysis, in some cases, at least, is liable to lead to symptoms, to manifestations, which are very much more serious, very much more disagreeable to the patient, than the symptoms which we attempt to remove. Now, if this is true, as Freud himself acknowledges, that the sexual trauma is merely the exciting cause, that the true cause is the psychosexual constitution, then logically psychoanalysis can do absolutely nothing beyond removing the exciting cause. It cannot possibly get at the root of the evil, namely, the psychosexual constitution, which existed long before sexual trauma acted on the patient. In other words, psychoanalysis will do for a patient of that kind just exactly what any other suggestive measure will do, if properly used, namely, it will remove symptoms. It will not cure the disease, and under these circumstances, and in view of the fact that I have had in one instance, which I cannot describe in detail here, an exceedingly disagreeable and unfortunate experience with the psychoanalytical method, I feel it is not a safe method of treating cases of hysteria or cases of psychoneuroses.

Dr. L. Harrison Mettler:—I desire to speak on two points only, without elaborately arguing either. It seems to me that the preceding discussion resolves itself into two distinct and widely separated heads. The first concerns merely the question of the examination of mental phenomena, the validity of psychoanalysis: the other the question of this examination always leading into the psychosexual sphere, as Freud intimates.

The theory that psychosexuality is the dominant factor in all the activities of life is about on a par with the utilitarian theory long ago promulgated by a certain school of English philosophers. As there are many people who do not think that mere utility is the only motive force behind every human act, good and bad, so there are many who believe that a large, perhaps the larger, part of human activity is absolutely independent of any sexual motive or relation. There is a large class of philosophic thinkers who hold that there would be no art, no science, no financial or commercial activity in the world if it were peopled by human beings of one sex or the other. They argue that in its last analysis all human performances resolve themselves into more or less obvious psychosexual manifestations. They insist that the sexual impulse, with its elaboration into the broadest conception of love, is always the conscious or unconscious factor that guides the human will, and that if this motive force were removed from the world there would be little left for human beings to struggle for. I for one do not accept so narrow a philosophy of life. I do not understand that Freud himself does, though some of his followers seem to attribute such a view to him. Admitting, as we all do, the importance and insistence of the sexual life in the affairs of human beings, I can agree with Freud, if I understand him correctly to say that in the psychoneurotics which he has examined the analysis of their



submerged mental activities invariably leads more or less into the psychosexual sphere. My own observations compel me to acquiesce in this view when expressed with these limitations. Were Freud to teach some of the things that have been attributed to him here to-night by Dr. Kuh, I would most emphatically decline to accept his teachings, but Freud does not seem to me to teach so gross and coarse a psychosexual dominance as that. Moreover, such teachings, which some have attributed to him, if promulgated by Freud, would, I think, have long ago awakened deadly skepticism as to his whole psychoanalytic work. So much for the first point.

Now, as to the question of the validity and usefulness of psychoanalysis, I think we are to be congratulated on having the subject presented so forcibly and clearly to us by Dr. Jones. I see in psychoanalysis nothing but the same advance that is going on in all other departments of medicine, namely, the closer study of our clinical problems along lines of physiology. Psychology, as Fiske says, is the science of sciences because the validity of all the other sciences depends on the validity of our interpretations of mental phenomena. Psychology is a branch of biology, especially physiology. The study of mental manifestations is leading us into a broader conception of psychiatric phenomena, just as a study of physiology when disturbed by microorganisms has given us a broader conception of pneumonia and typhoid fever. As each organism reacts in its own way physiologically to any noxious influence that may come in contact with it, so in the psychic sphere does each individual react differently from every other individual. Hence, as some one has said, each man, when insane, has his own insanity. The analysis of this reaction is what psychoanalysis attempts to make. It is not enough nowadays to say a man is insane because perchance he appears different in his acts and thoughts from the majority of his fellows. The grounds for his peculiar acts and thoughts must be determined before sanity or insanity can be pronounced, and these grounds it is the purpose of psychoanalysis to help to determine in each individual case. Formerly in psychiatry we have been too prone to depend on the symptoms *per se* and to establish classifications on mere groups of symptoms. Under the psychoanalytic method the symptoms are analyzed and accounted for. This is a decided advance in psychiatry, and commends the splendid work done by Freud, Jung, Jones and others.

Dr. Hugh T. Patrick:—Although without personal experience, I have studied this subject considerably, and fully agree that it is a most interesting one and worthy of serious consideration. There are a few rather obvious and elementary conclusions that have come to me since I have been thinking about this matter of psychoanalysis, observing my cases in the light of its claims, and talking with those who have been using it. First. In all cases of the psychoneuroses, as of other diseases, the more full and complete the information I can get of the patient and his disorder, the better. It has been my experience in caring for people carrying the burden of the psychoneuroses that the more painstakingly I go into the history of their lives, the more careful I am in getting ordinary clinical information; the more untrammelled I allow myself to be in burrowing into their sexual, social and general mental lives, the better position I am in to handle them. Because in handling a psychoneurotic patient we must get back to the problems which disturb that individual.

Second. It is clear that when with these ordinary methods of investigation, of inquiry and listening to the patient, I have been able to make plain to him that certain events or experiences in his life, apparently unimportant, have an important bearing on his present sufferings, I am almost certain of good results. When it has been made obvious to the patient that symptoms which are strange and disconcerting and alarming have had their origin in certain very early happenings in his life, we have already proceeded a long step in the right direction.

Third, I am fully convinced that the things which are, in the broad, sexual, make up a considerable proportion of the observations and experiences and thoughts and rudimentary conclusions of a child. I think if some of us would take time enough to stir up childish memories of ourselves and others and care-

fully to observe children, we would come to the conclusion that children notice the matter of the movement of the bowels, the distress of a full bladder and the relief following urination, the difference in the sexual organs of a little boy and a little girl and similar things that go with the acquiring of knowledge by observation. Not that they make a very profound impression on their minds at the time, but they do notice these things and there is a reaction to the mental impression and sometimes an emotional reaction.

Fourth. A good many years ago (before the days of the psychoanalysis), in a casual conversation, a very competent, thoughtful and well-balanced physician startled me by saying: "Of course, the sexual element is by all odds the most influential thing in life, especially in our present state of social existence." I must confess that I had never thought of it very much. Since then I have let that thought germinate and have taken every opportunity to see whether it was well founded, and I think that beyond a doubt it is. I am thoroughly convinced that our sexual relations (not meaning the sensual, but the sexual sphere in the broad sense of the word, from the absolutely good to the absolutely vile) are probably the influence of second importance in our lives. Life, fundamentally, is influenced especially by two primary laws: the law of self-preservation first, and the sexual laws second. The more I study patients with this in mind, the good and the bad, the more I am convinced that this is true.

Fifth: There is no conflict of all the conflicts that we encounter throughout our lives more trying than the one which every person goes through between what is our inborn, natural birthright of desire and passion and the beliefs, tenets and teachings of society as organized to-day. A child is very small indeed when it is first taught that it must not do certain things relating to the sexual sphere and to what we call decency. And with these little beginnings, then and there begins the never-to-end conflict between what is natural and what is "correct."

Sixth. In the light of the little I know of psychoanalysis I think I see more and more patients, a gradually increasing number, in whom the ordinary present-day methods of exploration seem to be inadequate. I think my associate, Dr. Hamill, will agree with me when I say that scarcely a day passes without a case in which we think psychoanalysis would be a help. I feel that there are elements in the case of which I am not aware. There probably have been etiologic factors of which the patient is as ignorant.

How many, or what patients suffering from the various psychoneuroses should be submitted to the treatment called psychoanalysis I do not in the least know. A very good neurologist, who is using the method, a few days ago told me that he thought the percentage very low indeed. Some physicians who have become particularly expert find the proportion high. According to them, there are few cases of hysteria, etc., which should not be so treated. There is, however, some doubt. I have an idea that the proportion is considerably less than half, because in the majority of these cases we can do very well with the older methods.

If we would take all the time and bother with these patients in carrying out the older methods that we have to take with the psychoanalysis, we would not be so industriously looking for another method. I think there will be a more or less (according to the skill of the physician) restricted number of cases which are certain to be best treated by this method.

Just one final word about the men in this field. Some of them I know personally. I think it is due to these workers to say that their work does not show the ear-marks of the unbalanced, enthusiastic and erratic. They state their findings judiciously and modestly. They make considerable claim, it is true, but when they can say (and I have not seen the statement refuted) that no man who has gone into the method thoroughly has not said that there is a great deal in it. I am sure it must have value; and I think it poor taste and unscientific for one not himself experienced to indulge in sweeping criticisms.

Dr. V. Podstata:—I have been a student of the Kraepelin School of Psychiatry, and while I still adhere to and practice its teachings, I am very much interested

in this subject, and not only willing, but anxious to learn all I can of it. I first had it brought to my attention by Dr. Adolph Meyer. I find that I can use it without any violation of principles previously held. This I am able to do particularly because of a certain thing which Dr. Jones has emphasized. Psychoanalysis largely means a method of education—that is what it really is. I do not know why the word education (or, as the French use it, re-education) would not be a better and more descriptive name than the word psychoanalysis, which only covers one point.

The method of teaching people how erroneous thinking about certain subjects results in serious disaster to themselves, is of exceeding importance. I believe the time is coming when we will take it up in our common schools; when the children will be taught not only how to memorize a lot of things, but they will be taught how to associate them and how to come to right conclusions which they can use in the future.

For that reason I believe what has been done is of tremendous service to us, and there is an opportunity for doing bigger work. I certainly intend to use psychoanalysis (with a great many modifications, of course, which everyone would have to make to fit the case in hand), and perhaps shall go farther than I originally intended by trying the method in dementia præcox. I must say, however, that I am not inclined to believe that dementia præcox is caused by purely mental influences. It appears to me, from pathologic findings in post mortems and in the clinical laboratory that there is something primarily wrong with the body of the sufferer. I can only point to the various findings in the blood, the chemical and organic changes found in the brain. I am inclined to believe that here we are dealing with a disease which has a toxic basis. I do not see, however, why this should in any way conflict with what we have been discussing. I do not see any objection to psychoanalysis, and the many good results reported should convince us that it is something we should become acquainted with.

Dr. H. N. Moyer:—When the Freudian method of analysis was first made known to me it appeared to me the most unmitigated rot that I had ever heard of, but it was brought again and again to my attention and I thought I would try it. I must say that I was simply astounded at the results. Now I know these gentlemen who have read the papers this evening would laugh if they could see the crudity of my procedure, in attempting to use it; but notwithstanding that. I have attained results which have astonished me and I have been treating psychoneurotics for twenty-five years!

If you say that this is suggestion, then I do not know what suggestion means in neurology. It is not suggestion. To say that it is re-education comes nearer to describing it, but it is not that exactly. But whatever it is, or however you describe it, it is an exceedingly valuable method of diagnosis and treatment. It gets at what is the matter with the patient. It does not necessarily cure him and you cannot use it in every case, and I suppose I have failed twice out of every three times, but that I am sure, and am free to admit, is largely due to my defective method of using the method, but all I can say is, try it. Then see what your results are. I am thoroughly convinced that it is one of the most efficient methods we have in many psychoneurotics. It reaches certain classes of patients who cannot be reached in any other way.

Dr. George F. Butler, Willmette:—I will refer simply to two points without attempting any argument. It seems to me that the preceding discussion has been on two distinct and separate points: the examination into the mental activity of the human mind is one thing. The other, the Freudian question, whether the result of a psychoanalysis points always to a sexual basis.

Psychosexuality as a matter referring to all the activities of life may be the opinion of some. It is very suggestive of the utilitarian theory of philosophy. In that, as you know, every act of life is done from a utilitarian principle, but many people do not accept that view. There are large numbers on the outside of the medical fraternity who do not believe that sexuality governs this world and



there are just about as many who do. I have heard people of the laity claim that were it not for the sexual impulse there would be nothing to work for, that it is the motive force in the world. I for one do not accept that, and if Freud finds that and concludes from his very broad generalization that the sexual impulse is behind all forms of activity, I think a large number of us will decline to accept that interpretation. I do not accept that and I think I see in the activities of the normal life as well as in the activities of the sub-normal life many sides which are not sexual. So much for that point.

Now for the question of psychoanalysis: As a modern analysis I think we are to be congratulated in having this subject brought up to us, for it is only physiology introduced into practical methods. It seems to me that the psychoanalysis is leading us into the wider conception of disease which we have reached in the study of pneumonia, typhoid fever and other diseases from an analytical standpoint, instead of putting them all down as practically the same thing simply because they have manifestations that are unlike those that we see in healthy, normal individuals about us.

Heretofore in psychiatry we have treated symptoms because they were not read and interpreted. With this method we will treat the individual, as such, and see where the symptoms lead and why, and get at the root of the trouble.

Dr. Julius Grinker:—Irrespective of the fact whether we are within or without the pale of the chosen few who had the privilege and opportunity to work with Freud, we must acknowledge that he has an analytic mind—a keen insight into human nature, which has opened new paths for others to follow. It must be admitted that it is not very easy to understand Freud's viewpoint, and for that reason we are under obligations to the essayist who has in numerous contributions and discussions endeavored to acquaint the American profession with Freud's work.

Whether Freud is correct in attributing all of the symptoms of the psychoneurotics to sexual trauma, repressed desire or sexual perversion becoming converted into a somatic disorder, I am not competent to state. Certain it is that Freud's work has stimulated greater activity on the part of physicians to analyze their patients' mode of thinking in reference to their past experiences. The physician who does not practice psychoanalysis in the broader sense is not competent to treat nervous cases. It will not do to tell a patient he has hysteria and that he is well, and then order him out of the office. That man will succeed who is not afraid to wade through mud up to the neck in order to reach a dry and healthy spot from which to begin a thorough cleaning.

Whether wrong or right that the sexual element is at the bottom of everything, Freud is not wrong in stating that either it or its equivalent is responsible for many things both good and bad.

The vehemence of an attack on a scientific problem is often in inverse proportion to the degree of ignorance of the attacking party. Freud's detractors are no exception to the rule, as was plainly demonstrated this evening. The man who either had no experience with the method or else is too indolent to learn it, is a very poor critic indeed, and had better learn something about it.

Dr. William G. Stearns:—Recognizing, as we all do, that there is no more potent influence in the making of man or woman than the sexual, I must heartily welcome any hypothesis or theory that will stimulate us to a greater effort to get at the bottom of the sexual element.

Years ago the founder of a school of medicine was said to have maintained that the sole cause of disease in the human body was the itch mite. Regardless of the truth or fallacy of his position, Hahnemann was a great stimulus to the medical profession. I do not mean to place the Freudian theory in the same class exactly, yet it is based on a similarly startling and unique proposition—that psychoneuroses start with some sexual trauma—and should be most stimulating to more effective study of these much-neglected and puzzling neuroses.

Dr. H. Douglas Singer (closing the discussion):—I do not think there is anything to which I wish to reply except to Dr. Kuh's remark that I stated that



the therapeutic outlook is hopeful. At the present I think it is decidedly premature for us to say what the outlook is. The point I wish to emphasize is that if we attain good results at all it must be in the very early stages.

In regard to dementia præcox: we cannot go into that very fully. One might suggest in answer that even if intoxication is present, the presence of emotional disturbances must necessarily give rise to disturbed metabolism, for, as we know, all of the organs of the body are involved in every expression of emotion, and it is possible that such metabolic disturbances may be capable of giving rise to an intoxication and in that way the results we find by examination of the blood and chemical analysis of the brain might be due to disturbed metabolism resulting from the emotional upset.

Dr. Ernest Jones (closing the discussion):—I thank you very heartily for the patience with which you have listened to my exposition of an unpopular subject.

Dr. Kuh opened his remarks by saying that I had not enumerated all the objections to the psychoanalytic method, a statement which, indeed, occurs in my own paper. I came prepared to meet these objections, but not to meet those that are brought against a hypothetical theory that is not Freud's. Most of Dr. Kuh's objections are to views that are not held by Freud, whose views he has seriously misunderstood and distorted.

According to Dr. Kuh, Freud extends the term sexuality until it includes practically all human activities. The truth is that Freud uses the term in a definite, logical sense, and holds that psychosexual activities are *connected with* many non-sexual ones, a very different matter. I might remark that if Dr. Kuh's conception of Freud's views were true, there is no reason why he should so vigorously disagree with Freud when he traces the psychoneuroses to sexual factors (i. e., to human activities).

Then comes the old argument that Freud has changed his views about the significance of infantile sexual traumata. Freud has merely shifted his point of view in deference to more extensive experience. He still holds that such traumata are essential factors in the development of the psychoneuroses, but he now lays more stress than before on the mode of reaction toward them than on the mere occurrence of them.

Dr. Kuh says that he cannot agree with the logic of Freud's arguments that because the word *Frauenzimmer* in German means woman, therefore to dream of a room indicates a sexual thought, and that because Freud sees a resemblance between a raised umbrella and an erect penis, therefore to dream of an umbrella also indicates something sexual. I surely need hardly say that Freud has never said anything resembling this. I doubt if any sane being has ever used such absurd arguments as these incorrectly ascribed to Freud by Dr. Kuh, but in any case I can hardly be expected to defend them.

Dr. Kuh says he has read in Hitschmann's book that thumb-sucking represents a subconscious sexual act. This must certainly be an error, for not only does Hitschmann never use the word *subconscious*, always using the word *unconscious*, which denotes something quite different, but also he does not represent thumb-sucking as an unconscious act of any kind. Anyone who had read Freud would know that thumb-sucking is mostly performed at a time of life when there is no unconscious mentality at all.

It is quite unfair to say that Freud has reverted to the old view as to the importance of masturbation in regard to the psychoneuroses. All he says is that in certain cases the mental conflict (remorse, etc.) engendered by the act operates by awakening still older conflicts of infantile life, and so may become pathogenic. This is a very different matter.

Dr. Kuh cannot agree with me that the objections to the Freudian theory are due merely to prudery. I never said that they were, but only pointed out the easily demonstrable fact that there exists a great deal of prudery in regard to these matters, which renders it difficult to obtain an unbiased consideration of them.

I cannot here go into the whole question of suggestion, especially as I have recently published a paper (in the *Journal of Abnormal Psychology*) fully dealing with it. Dr. Kuh considers that the effect of psychoanalysis is due to the giving of suggestions, quoting as proof of it Freud's remark that patients must relate all their thoughts, even disagreeable ones. It is true that when a patient halts and shows signs of shame he has to be told to speak out even if it is painful, but if anyone thinks that the brilliant results of psychoanalysis can be obtained by the "suggestion" of asking a patient to talk about disagreeable matters, my only answer is: Let him try.

In conclusion, when Dr. Kuh tells us that he has had bad results by using what he calls psychoanalysis, all I can say is that I am not very surprised.

Dr. Julius Grinker:—I think it is the sense of the two societies to adopt a resolution thanking Drs. Jones and Singer for their valuable papers. I therefore move that a rising vote of thanks be tendered them. Seconded and carried.

### LAKE COUNTY

Meeting of the Lake County Medical Society in joint session with the Lake County Teachers' Association and the Lake County Tuberculosis Institute. Program under the auspices of the Educational Committee of the Lake County Tuberculosis Institute held at Deerfield Township High School auditorium, Highland Park, Illinois, Jan. 21, 1911.

An audience made up of teachers, physicians, members of Women's Clubs and charity workers to the number of 200 attended this meeting. The following program was rendered: Dr. L. M. Bergen, Highland Park, "School Hygiene." Pres. J. S. Nollen, Lake Forest College, "What the Laymen Expect of the Physician in the Prevention of Disease." Dr. H. E. Dearholt, Milwaukee, "What the Physician Expects of the Laymen in Assisting in the Prevention of Disease."

Dr. Bergen's paper was a most valuable one and gives the most modern ideas in assisting the teacher in her new line of work, that of teaching hygiene in the schools.

President Nollen said that we had a right to expect of the medical profession an example of right living as much as we had to expect a good example to be set in the moral code by the clergy. We have a right to expect of the medical profession that they be leaders in the agitation for better water supplies, better disposal of sewage and more attention to personal and public hygiene.

Dr. Dearholt of Milwaukee argued that the public is getting about all it pays for from the medical profession. He said that in Wisconsin they were paying several times as much for the protection of wild animals as was being paid all the health boards of the state. Doctors have a living to make the same as other people. The public has no more right to ask them to give their time and experience to the agitation of public matters than they have the lawyer or other professional men. He wants to see the state take charge of many of the institutions that are now supported by charity and administer them as schools and give them proper support, the same as other state institutions.

The next meeting of the Lake County Medical Society will be addressed by Dr. Sidney D. Wilgus, superintendent of the Illinois State Hospital, on the subject, "The Management of Hospitals for the Insane," and will be held some time in March at Waukegan, Ill.

W. H. WATTERSON, Sec.

### MADISON COUNTY

The Madison County Medical Society met at the rooms of the Commercial Club in Edwardsville on February 3, with President W. H. C. Smith in the chair. Members present: Drs. Tulley, Yerkes, Hastings, Wahl, J. H. Fiegenbaum, Luster, Zoller, Kerchner, Wedig, Riley, Smith, Harrison, Barnsback, Sims, Pfeifferberger, Oliver, Kiser, King, R. B. Scott, Ferguson, Robinson and the secretary. Visitors: Drs. Lucinda Corr, Carlinville; Wiggins and Lillie of East St. Louis; Wiedman

and Spitze of Edwardsville, and the honored speaker of the day, Dr. A. C. Cotton, of Chicago, President of the Illinois State Medical Society. The matter of the transfer card of Dr. F. C. Vogt of Livingston was taken up by unanimous vote, and on motion said card was accepted and Dr. Vogt declared a member of this society by transfer from the Sangamon County Medical Society. The committee on resolutions on the death of Mrs. Susetta B. Yerkes, wife of Dr. T. P. Yerkes, and mother of Dr. L. L. Yerkes, both of Upper Alton, made a report which was adopted by rising vote.

A communication from Senator Beall, asking for three or four members to appear before the senate judiciary committee February 16, in support of his bill, amending the marriage laws, was read. Dr. Tulley moved the same be accepted and a committee of three appointed. The Chair appointed Drs. Tulley, Pfeifferberger and E. W. Fiegenbaum. On motion made by the secretary the name of our president, Dr. W. H. C. Smith, was added to the committee. The courtesy of the society was then extended to all visiting physicians. Our State President, Dr. A. C. Cotton of Chicago, then read a paper on "Acute Anterior Poliomyelitis." It was a very exhaustive treatise taking in the whole subject from pathology and etiology through symptomatology and treatment. It was highly instructive and was greatly appreciated by all who were present. The discussion became general and was participated in by Drs. Pfeifferberger, Smith, Ferguson, Wiggins, Lillie and others. A rising vote of thanks was tendered to Dr. Cotton for his very able address and to show our appreciation of his visit to us. The board of censors made a favorable report on the applications of Drs. E. C. Spitze of Edwardsville, Malfred Hamm of Madison, Geo. R. Cowan of Granite City and Geo. K. Worden, Alton, and they were unanimously elected. It was ordered that we hold our next meeting in Granite City, on March 3, and the secretary was instructed to invite the members of the East St. Louis and St. Clair County Medical Societies, through their respective secretaries. On motion adjourned.

E. W. FIEGENBAUM, Secretary.

### MCLEAN COUNTY

The McLean County Medical Society met Jan. 5, 1911, with Dr. J. H. Fenelon in the chair; Dr. F. C. Vandervoort, secretary pro tempore. Dr. G. D. Zeller discussed "Pellagra." In view of the fact that this puzzling disease is rapidly assuming alarming proportions in the United States, the topic was a particularly timely one and Dr. Zeller was given the closest attention by everyone present.

### PELLAGRA, THE CLOUD ON THE MEDICAL HORIZON OF ILLINOIS

G. D. ZELLER, M.D., SUPERINTENDENT BARTONVILLE ASYLUM

#### (ABSTRACT)

In the beginning the speaker announced that the title "The Cloud on the Medical Horizon of Illinois," was a formidable one for a disease, the very existence of which is in dispute. Pellagra is so puzzling that some medical authorities deny its existence, while there is nothing of a satisfactory nature to be found in text books.

Pellagra has been known since 1735, the name being of Italian origin meaning "rough skin." The Italians have been investigating pellagra for the past century and a half and have not yet advanced beyond the corn field. What was known as the anti-corn crusade in that country and a subsequent reduction of the number of cases led the medical authorities of that country to make the generalization that its origin was in the use of Indian corn or maize and yet today Italy is divided into two camps on the corn theory.

While it is true that the anti-corn crusade in Italy had the effect of reducing the actual number of cases in that country, the fact is generally overlooked that this crusade was of a highly hygienic nature, which fact in itself, would account for the reduction in the number of cases. The corn theory, however, is practically



universal. Even the English clung to it until the appearance of the disease in the United States.

The disease was first noticed in the United States in 1906 and since that time it has been recognized in twenty-six states. There are at the present time 300 known cases of the disease in Illinois. There is a conceded mortality of 50 per cent. and this being the case, the day is not far distant when the disease must be brought strikingly to the attention of Illinois citizens and particularly Illinois physicians. As workers in the greatest corn producing county of the greatest corn producing state, the physicians of McLean county should investigate the matter thoroughly.

Dr. Zeller stated the opinion emphatically that pellagra is a disease entity. He said it was a disease of striking anomalies, that it affected people in every walk of life and although most prevalent among the middle aged, children are by no means immune from it. Insane people have it, but it is not known whether insanity is caused by pellagra or pellagra follows insanity. It is an entirely painless disease, is greatly affected by solar influences, yet, in spite of this fact, the negro is peculiarly susceptible. It is spreading progressively, yet is nowhere considered contagious. Dr. Zeller himself has seen 200 cases and in not a single instance was he himself nor any of the attending nurses affected. Persons suffering with pellagra have been known to live from fifteen to fifty years, while others have been attacked by the malignant form and died in a week.

The disease first evidences itself by a red spot over the knuckles of the hand and rapidly extends above the wrist. It may go above the elbow and also attack the neck and lower extremities. The effect of the disease leaves the parts attacked in a condition similar to the effects of scalding. Two patients died at the Bartonville asylum several years ago and the coroner held inquests in both instances. The verdicts were that the patients had been scalded to death and an investigation was narrowly averted. That was before pellagra became known in this country. To-day the officials of the institution know that the patients died of pellagra.

The disease in its severe form has all the worst features of every known skin disease, while in its lighter form the temperature of the patient is normal or even subnormal, but may rise to 108 without an instant's warning. In temperate climates the patients show no signs of the disease during the winter months, but it immediately reappears with the approach of summer. A patient never knows when he is cured and at the present time there is no way of knowing. There is no effective treatment known, although arsenic administered both internally and externally has in some instances proved efficacious.

Following the reading of Dr. Zeller's paper, an open discussion prevailed, in which a number of Bloomington physicians questioned Dr. Zeller on the different phases of the disease.

#### MORGAN COUNTY

The Morgan County Medical Society held its regular monthly meeting Thursday evening, Feb. 9, 1911, at the Public Library, Jacksonville, Illinois, with the following members present: Drs. Milligan, Reid, Pitner, Baker, J. U. Day, Gailey, Perkins and Metcalf of Franklin, Hairgrove, Cole, Crouch, Bowe, Woltman, Baxter, Norris, Duncan, Stacy, Black, Campbell, Hardesty and Gregory. Dr. L. J. Harvey of Griggsville was a visitor. By special invitation, all the druggists, dentists, nurses and physicians not members of the society were asked to attend. Also a representative of each local newspaper.

The subject presented was "The Relation of the Treatment of the Sick to the Public Press," by Dr. Carl E. Black. In part, Dr. Black's paper was as follows:

A number of times discussions have arisen in the County Society regarding the appearance of names of physicians in the public press, especially in connection with accident cases and occasionally in connection with cases of illness. Also there has been much criticism of the press on account of its advertisements



of nostrums and quack physicians. These discussions have always been unproductive and unsatisfactory for lack of accurate data. During the year 1910, the author had clippings made from each of the two daily papers of Jacksonville. These embraced all that was said in the papers regarding any physician, either in form of an advertisement or card or as reading matter. They also embraced all advertisements of nostrums, quack doctors, irregular physicians, veterinary surgeons, druggists, dentists and in fact everything which in any way pertained to the practice of medicine or the treatment or care of the sick or the prevention of disease. These clippings were classified and pasted in folders so as to form an exhibit. This exhibit was the most interesting and profitable feature of the occasion. Each physician could see just what has been said about himself or his neighbors in the local press during the twelve months past, as he could also see the quantity and character of nostrum advertisements, the advertisements of quack doctors, etc. Altogether it was a unique and profitable exhibit and was full of suggestions for future work. Several charts were presented which summarized the information gained from the clippings.

CHART NO. 1.—PHYSICIANS

Number.	Standing Cards † Times in		Mentioned in Reading Matter.		Totals.		
	Courier.	Journal.	Inches.	Times.	Inches.	Times.	Total.
I .....	310	310	20	14	640	634	30.
II .....	.....	.....	86½	11	86½	11	.....
III .....	.....	.....	13½	4	13½	4	.....
IV .....	310	310	163	43	783	663	30.
V .....	.....	.....	44	8	44	8	.....
VI .....	310	310	28	9	648	629	30.
VII .....	310	310	14	4	634	624	30.
VIII .....	.....	.....	2	2	2	2	.....
IX .....	.....	.....	20	6	20	6	.....
X .....	.....	.....	5	7	5	7	.....
XI .....	.....	.....	70	21	70	21	.....
*XII .....	.....	.....	16	6	16	6	.....
XIII .....	310	310	1	3	621	623	30.
*XIV .....	.....	310	46	19	356	329	15.
XV .....	310	310	20	12	640	632	30.
XVI .....	310	310	82	23	702	643	30.
XVII .....	.....	235	13	5	248	245	12.
XVIII .....	310	.....	7	3	317	313	15.
XIX .....	310	.....	.....	.....	310	310	15.
XX .....	.....	310	1	1	311	311	15.
XXI .....	310	310	13	4	633	624	30.
XXII .....	310	310	36	16	656	636	30.
XXIII .....	.....	205	23	11	228	216	10.
XXIV .....	310	310	34	25	654	645	30.
XXV .....	310	.....	74	24	694	644	15.
*XXVI .....	310	310	53	30	673	640	30.
XXVII .....	75	75	36	11	186	161	7.50
*XXVIII .....	310	310	20	9	640	629	30.
XXIX .....	.....	310	180	44	490	354	15.
XXX .....	.....	.....	11	8	11	8	.....
XXXI .....	310	310	1	1	641	620	30.
XXXII .....	.....	.....	12	10	12	10	.....
XXXIII .....	310	310	40	17	680	637	30.
XXXIV .....	.....	.....	15	3	15	3	.....
XXXV .....	.....	.....	14	22	22	14	.....
XXXVI .....	.....	.....	42	12	42	12	.....
*XXXVII .....	.....	.....	5	5	5	5	.....
XXXVIII .....	310	310	70	16	690	636	30.
XXXIX .....	.....	.....	5	4	5	4	.....
XL .....	.....	.....	12	5	12	5	.....
XLI .....	.....	.....	1	2	2	2	.....
XLII .....	310	310	5	5	625	625	30.
XLIII .....	.....	150	4	4	154	154	7.50
XLIV .....	150	.....	19	5	169	155	7.50
XLV .....	310	.....	12	8	322	318	15.
6,425		6,555	1,389	502	14,628	13,678	629.50

\* Not members of Morgan County Medical Society.

† Each card is estimated to occupy an inch of space.

## CHART NO. 2.—MEDICINE AND THE PRESS

## GENERAL SUMMARY

Class.	Times.	Total.	Inches.	Total.	Est. Cost.	Total.
Physicians, local, paid.....	13,290		13,290		\$644	
Physicians, local reading....	502		1,389		....	
Physicians from county.....	206		444		....	
Physicians from neighboring counties .....	140		168		....	
Physicians from a distance..	84		193		....	
Total .....		14,222		15,484		\$644
Dentists, paid .....	4,444		4,590		\$165	
Dentists, reading, dental society .....	20		104		....	
Total .....		4,464		4,694		\$165
Veterinary physician, paid..	620		520		\$ 30	
Veterinary physician, reading.	32		32		....	
Total .....		682		552		\$ 30
Druggists, A .....	672		3,431		\$172	
Druggists, B .....	954		4,485		224	
Druggists, C .....	...		...		...	
Druggists, D .....	510		3,263		163	
Druggists, E .....	4		2		0	
Druggists, F .....	31		110		5	
Druggists, G .....	...		...		...	
Druggists, H .....	...		...		...	
Druggists, I .....	164		315		29	
Retail Druggists' Association .....	7		14		....	
Total .....		2,342		11,880		\$594
Newspapers, A.....	926		5,064		\$253	
Newspapers, B.....	411		1,595		318	
Total .....		1,337		6,659		\$333
Quacks and charlatans, A...	285		5,158		\$258	
Quacks and charlatans, B...	258		2,635		131	
Others .....	63		565		28	
Total .....		506		8,358		\$428
Osteopaths, paid .....	215		320		\$ 16	
Osteopaths, reading.....	8		10		....	
Total .....		223		330		\$ 16

## EDUCATIONAL MATTERS

Newspaper therapeutics....	5		22			
Public health problems....	21		286			
Tuberculosis .....	40		353			
Historical medicine .....	2		141			
State Board of Health.....	14		106			
State Board of Control.....	11		71			
State Institutions .....	73		245			
Associated Charities .....	19		58			
Medical Society Reports....	41		183			
Med. Inspection of Schools.	15		252			
Hospitals, A .....	89		138			
Hospitals, B .....	207		555			
Miscellaneous .....	40		322			
Total .....		577		2,732		
Coroner .....	38		382			
Births .....	158		168			
County commissioners .....	88		7,000		\$280	
Personal injuries, no doctor mentioned .....	135		394		....	
Personal injuries, doctor mentioned .....	104		....		....	
Total .....		523		7,944		\$280
Undertakers, paid .....	1,240		1,860		\$ 90	
Undertakers, reading .....	1		2		....	
Total .....		1,241		1,862		\$ 90
Grand total .....		26,117		60,495		\$2,580

The first chart shows the physicians as they appeared in the papers. The physicians and others are indicated by number or letter and not by name. The second chart is a summary of everything of all classes which appeared in the papers during the twelve months and forms an exceedingly interesting and important exhibit. Probably every physician and every one else who has looked at these tables has been surprised at the small amount which the newspapers receive from the advertisements of nostrums and charlatans. Two newspaper men representing each of the daily papers, were present throughout the meeting and stated that they believed this table was substantially correct excepting that possibly the estimate of moneys received for the advertising of nostrums and charlatans was about 20 per cent too low. Even adding this 20 per cent. the amount is comparatively small and there should be no great difficulty in inducing the press to abandon this kind of advertising for, thereby, they would secure at once the more hearty cooperation of all truth loving people, which would certainly be well worth the money. The fact that two popular daily papers receive less than \$3,000 per year from all advertisements of druggists, nostrums and charlatans, was a surprise to everyone and was the most important fact brought out by the investigation. The amount is certainly much smaller than even the newspapers themselves had supposed.

Dr. Black concluded his paper with the two following paragraphs:

"There is no way that we can devise which will so effectually drive the manufacturers of nostrums, the quack doctors and the irregular practitioners out of business as for each member of this society to so conduct his practice as to not be guilty of any just criticism. To do this is simple. First, he must carefully and thoroughly examine every patient until he has exhausted all of his own resources in an effort to arrive at a correct diagnosis. In addition to this, he must be willing to accept the assistance of any other physician or any other method of diagnosis which will supplement his own efforts to the end desired. We all know that after a correct diagnosis has been made the application of appropriate treatment is not difficult or if it is difficult, we are in a position to explain carefully to our patient the difficulties of treatment, the uncertainty of results. In other words, to give them a correct diagnosis. If we do this, we will greatly increase the respect and esteem in which we are held by the public.

"The press follows the public opinion closely. Whenever public opinion determines that nostrums, quacks and irregular practitioners are not necessary and are harmful, their advertisements will disappear from the public press and not until then. From my point of view, the remedy for what we consider as a great evil and a great harm is entirely within our own control and I appeal to you to set about the task of so thoroughly elucidating every diseased condition brought to your care that the patient will feel that he has received all that he was entitled to at the hands of a great and honorable profession."

An interesting discussion followed the paper and was participated in by the two newspaper representatives, Dr. Kopperl, president of the local Dental Society, who spoke in behalf of the dentists, and several members of the society presented their views on the subject. The newspaper men had come to the meeting with the expectation of catching "thunder," but had only words of praise for the broad minded way in which Dr. Black presented his paper. One of them stated that the real effect of the paper was that the advertising of the nostrum was not only objectionable to the medical profession, but also a detriment to the welfare of the public. Dr. Kopperl thought that there were times when one was justified in having a card put in the paper, and Dr. Harvey could not see any more harm in a doctor's name being mentioned with a case than a lawyer. On the other hand, Dr. Pitner said: "What interest has the public in who the attending physician is? The frequent mention of a physician only in connection with a case savors of undue prominence and pushing of the individual for public recognition. You cannot fool a doctor on this subject, they know the quackery and will spot those fellows every time. A man should make his claim and ask recognition by the work he does and the man he is, not what he claims or pretends or solicits. Of all classes, the most easily imposed upon are the sick people. They are ignorant of disease in general and no honorable man will deceive



them. But here is where the quack flourishes by making false pretenses of cure when he knows he is not able to fulfil his promises. The A. M. A. has been doing good work in the way of exposing fraud and fraudulent nostrums."

Dr. Bowe thinks the spirit of commercialism has largely entered into the medical profession, and that specialization without preparation is too prevalent.

Dr. Reid hit the nail on the head when he said: "It may be of interest that some prominent citizen is sick or had an accident, but of what earthly interest is it to know that the patient was operated on by A by the assistance of B, or that he got there in his automobile in so many minutes? We know why those things are put in the paper and what is meant by them."

Dr. Milligan says the doctors should strive to educate the public through the papers on public health subjects and soon the patent medicine ads, etc., will be crowded out.

The matter of carrying cards in the paper is done because it is the style. Nobody is going to look at the cards in the paper to see what doctors they want, is the opinion of Dr. Crouch. This is an educational question. The newspapers of this country, this community, lead the public opinion to a certain extent, that is their purpose. Now if a newspaper advertises Lydia Pinkham's remedies, the poor ignorant woman who answers that advertisement will say that the *Journal* and the *Courier* stand for it, they are back of it. The newspaper in an educational way is back of whatever they put in the paper.

Now, would it not be much better if the space occupied by these various advertisements be occupied by matters regarding the prevention of tuberculosis, medical inspection of schools, and educated the public in questions that they are vitally interested in? That is something the public ought to know. Tubercular people are walking the streets every day menacing the public health. Are the papers calling attention to it? I don't mean this as a special criticism of the papers, but would not the medical profession be willing to lend a hand to furnish the material to educate the public? I think it is perfectly legitimate that their names should be added in questions of public health, not as an advertisement of the physician, but as a purely educational motive."

A. R. GREGORY, M.D., Secretary.

## PEORIA COUNTY

### THE PEORIA CITY MEDICAL SOCIETY

At the regular meeting of The Peoria City Medical Society on Jan. 17, 1911, Dr. T. W. Gillespie read a paper on "The Anesthetist as a Member of the Surgical Team." The doctor urged the necessity of trained anesthetists who have a general working knowledge of the technic of the surgeon with whom they work, in order that the least possible amount of anesthetic may be given, getting profound sleep only when sensitive structures are being handled. The fact that without anesthetics little surgery would be done, and that danger attends all anesthesias, places the anesthetist as an important member of the surgical team. He should watch the operation, keep track of the different stages, be just a little ahead of the surgeon, and have the patient relaxed for the handling of sensitive structures, such as the peritoneum. He should conserve the anesthetic in intestinal anastomosis, etc. The greater the amount of anesthetic used, the greater the danger to the patient; therefore, short operations and trained anesthetists.

The doctor gave statistics from the clinic of Dr. Clifford U. Collins extending over a period of years, in the use chiefly of ether by the open method; compared the value and dangers of the various anesthetics, favoring the use of nitrous oxid gas, with ether when needed to relax the patient at times in the major operations. It seems to be attended with the least danger, both immediate and remote, and is by far the most satisfactory to the patient. He described the Teter apparatus and the gas manufacturing plant as used by himself and as studied by him under Teter in Cleveland recently. The discussion was opened by Dr. R. A. Hanna, and was participated in by a large representation of the membership present.

Dr. Collins reported the conclusions in court, wherein the suit for malpractice against Dr. J. W. Daugherty, of Chillicothe, member of this society, was dismissed on account of no cause for action, the plaintiff failing to prove any negligence on the part of the doctor.

At the semi-monthly meeting of February 8, the essayist was Dr. F. K. Sidley, subject "Deaf-mutism, Partial Deaf-mutism, with Education of Deaf-mutes." The doctor laid particular stress upon the elucidation of the "tone-islands," wherein so many so-called deaf-mutes are found to hear certain tones of the tuning fork, and recognize some of the vowels. This forms a foundation for education. The lip method has supplanted the old sign or finger method of teaching. A mirror is used to study the motion of the lips, and the four-meter speaking tube is used in teaching. Instruction should begin at 7 years of age. The doctor has recently found tone-islands in a large number of cases which were thought to be completely deaf.

Dr. C. B. Welton read a five minute paper on "Defective Eyesight in School Children," in which he mentioned the work of Dr. Neff, of Philadelphia. Examination of the eyesight of the Philadelphia school children showed 60 per cent. defective. The munificent sum of \$300 was appropriated to correct the vision of 354 children whose sight was so poor that they could neither see to read on their desks nor on the blackboard. This correction of defective vision brought about most excellent results, and undoubtedly saved many of these backward children from becoming incorrigibles and delinquents and subjects for the state institutions.

Dr. J. H. Bacon read a five minute paper on "The Medical Inspection of Schools," grouping the findings as follows: Infectious diseases, tuberculosis, physical defectives, poor and insufficient food, the mental weakling and school hygiene and exercise. Dr. Bacon suggested that there would be no difficulty in getting a sufficient number of the society members to volunteer their services for a time to demonstrate the value of school inspection. He called special attention to the economic gain to the community by largely increasing the health and efficiency of the school children.

Dr. S. M. Miller read a five minute paper on "Tubercular School Children," recommending persistent medical inspection to ascertain the tubercular, who are to be placed under surveillance. Those having the "closed" or non-contagious form should be watched carefully, guarded against mental and physical overstrain, etc. Those having the "open" form, who are expectorating, should be *excluded* from the school precisely as other contagious diseases are excluded, both for the patient's own good, that he may recover under proper conditions, and to protect the healthy children. This class should be placed in open-air schools. Dr. Lowman of Cleveland examined 500 school children and found 100 of them tubercular. Improvement in physical condition and mental ability has been demonstrated thoroughly at the Graham school in Chicago, where they now have 20 open-air rooms, the children wearing coats and hats; the thermometer standing at 40 to 50.

Dr. W. C. Williams opened the discussion. Superintendent Gerard T. Smith of the city schools, and Judge Maple, president of the school board, were present and took part in the discussion. They gave specific reasons for medical inspection and expressed appreciation of the offer of members of the society to help inaugurate the system in the Peoria public schools, without recompense.

E. W. OLIVER, Secretary.

#### SANGAMON COUNTY

The Sangamon County Medical Society held its regular monthly meeting at the Y. M. C. A. building, Feb. 13, 1911, the Lincoln Library Building being closed on this date in honor of Lincoln's birthday. Dr. G. F. Stericker, president, presiding at the meeting. The minutes of previous meeting read and approved. Mrs. Prince's card of thanks to the president for sympathy extended to her by the

society at the death of her husband, Dr. J. A. Prince, was read. Dr. G. N. Kreider moved that Dr. E. E. Hagler, chairman of committee to draft appropriate resolutions relative to the death of Dr. J. A. Prince, be informed by the secretary to report action of same to this society at our next monthly meeting. Carried. Dr. O. L. Zelle's application for membership was read. Dr. S. Castel moved Dr. Zelle's application be referred to the board of censors. Carried.

The president asked the disposition of the society relative to Dr. S. E. Munson's report as chairman of committee of December 10 meeting, recommending an increase of annual dues from \$4 to \$5; action on above having been deferred till this meeting. Dr. T. H. D. Griffiths moved the question of revision of by-laws as follows be acted on at this meeting as our dues are due: Annual chapter v, section 2, second line, by striking out the figure 4, and substituting the figure 5. Also annual chapter 5, section 2, first line, by striking out figure 4, and substituting figure 5. Dr. C. L. Patton moved adoption of revision. Carried. The letter from Dr. E. W. Fiegenbaum of Edwardsville, Ill., to Dr. G. N. Kreider, asking the society to support Senator Bell's bill relative to marriages in Illinois, requiring physicians' certificates of health, and read at previous meeting, came up for discussion. The matter was referred to the legislative committee for action. Dr. S. E. Munson moved that president appoint legislative committee. Carried.

Dr. H. T. Morrison presented a most thorough and instructive paper on "The Present Epidemic of Scarlet Fever in Springfield." There was shown a plat of Springfield and each case of scarlet fever was represented by a tack, different periods, etc., of epidemic being represented by different colored tacks. It was unique, showing the district origin of epidemic, districts showing greatest infection and its spread through the city. Discussion was opened by Dr. C. M. Bowcock. The general discussion which followed was participated in by most of those present, and proved the appreciation and importance of Dr. Morrison's paper. The absence of Dr. O. B. Babcock, who was on the program to present "Quarantine in Scarlet Fever Epidemic," and of Dr. G. T. Palmer, who was to present "Closing of Public Schools During Scarlet Fever Epidemic," was regretted. Members present: Helen Babb, C. M. Bowcock, A. L. Brittin, Stanley Castle, O. H. Deichman, T. H. D. Griffiths, E. B. Godfrey, G. N. Kreider, C. A. Lloyd, C. H. McElfresh, H. T. Morrison, S. E. Munson, C. S. Nelson, C. L. Patton, G. F. Stericker, I. H. Taylor, L. C. Taylor, A. E. Walters, W. A. Young. Drs. Munson, Griffiths and Bowcock were elected to the legislative committee. Adjourned.

#### WHITESIDE COUNTY

The annual meeting of the Whiteside County Medical Society was held in Sterling, Feb. 8, 1911. President Broderick in the chair, and Dr. Perry appointed Secretary pro tem in absence of Dr. Sullivan. The annual election of officers resulted as follows: President, Charles E. Parker, Sterling; vice-president, Frank Fitzgerald, Morrison; secretary and treasurer, Wm. H. Perry, Sterling; delegate, Frank Anthony, Sterling; alternate, J. A. Nowlen, Morrison.

The afternoon session was devoted to reports of clinical cases. Dr. Charles G. Beard presented two cases of endocarditis with emboli. Both cases exhibited symptoms of cerebral embolism with paralysis, as well as numerous instances of embolism in mesenteric and peripheral arteries. Dr. Charles E. Parker of Sterling presented a case of measles complicated by pneumonia. The course of the latter was very atypical and was accompanied by purpurin manifestations.

A symposium on "Drug Poisoning" followed. Cases of acetanilid poisoning were cited by practically all present. Those present were: Drs. Nowlen, Fitzgerald, J. R. and J. F. Keefer, Anthony, Broderick, Beard, Parker and Perry.

Next meeting to be held at Morrison, April 12th.



## WINNEBAGO COUNTY

The Winnebago County Medical Society met in annual session Tuesday, Jan. 10, 1911, at 8 p. m., at the Nelson House, Rockford, with President W. Grant Hatch in the chair.

On calling the roll, the following members were present: Drs. Allaben, Andrus, Atehison, Barth, Broughton, Crawford, Culhane, Cunningham, Dunn, Eakin, Farrell, Fitch, Gill, Goembel, Hanford, Hatch, Howard, Howell, Kimball, Kinley, Lofgren, Markley, Park Paul, Rogers, Scott, Starkey, Tuite, Vanderhoof, Winn, Wright.

The minutes of the last meeting were read and approved. The censors reported favorably on the applications for membership in this society, and the following were elected to membership: Dr. Ethan P. Allen, Rockford, graduate of Rush, 1866; licensed in Illinois, 1893. Dr. Robert W. Markley, Rockford, graduate Northwestern Medical School, 1898; licensed in Illinois, 1898. Dr. Guy Hall, Durand, Ill., graduate P. and S., St. Louis, Mo., 1908; licensed in Illinois, 1910.

The applications for membership in this society of the following men were referred to the censors: Dr. H. W. Ackemann, Rockford, graduate Northwestern Medical School, 1909; licensed in Illinois, 1910. Dr. O. M. Good, Rockford, graduate Chicago College Medicine and Surgery, 1908. Dr. E. E. Ochsner, Rockford, graduate Rush, 1896; licensed in Illinois, 1898. Dr. O. A. Olsen, Rockford, graduate Herring Medical College, Chicago, 1908; licensed in Illinois, 1908. Dr. C. M. Ranseen, Rockford, graduate Northwestern University Medical School, 1874; licensed in Illinois, 1877. Dr. C. V. Urbom, Rockford, graduate Hering Medical School, Chicago, 1903; licensed in Illinois, 1903.

Dr. P. L. Markley read a paper on "Practical Points in Surgical Diagnosis." Discussion by Drs. Wright, Howard, Gill, Fitch and Kimball.

Report of committees. The Committee on Bacteriological Laboratory was granted further time for report. The secretary and treasurer's report was accepted. Secretary's report. Winnebago County Medical Society, for the year ending Dec. 31, 1910: Organized at Rockford Oct. 18, 1881; chartered Jan. 26, 1893. Number of meetings held annually, nine. Place held, Rockford. Dates held, January 11, February 8, March 8, April 12, May 10, September 13, October 11, November 15, December 13, 1910. Average attendance, thirty-six. Date of annual election of officers, Jan. 11, 1910: President, Drs. W. Grant Hatch, Rockford; vice-president, George M. Haines, Durand; secretary and treasurer, Frank W. Hanford, Rockford; delegate, John E. Allaben, Rockford; alternate, P. L. Markley, Rockford; censors, W. B. Helm, W. S. Howell, D. B. Penniman. Members gained, three. Drs. W. H. Cunningham and C. H. Latham, by application; Dr. H. A. Pattison by transfer from Macoupin County Medical Society. Loss of members, seven: Dr. George M. Haines, moved from Durand to Grand Junction, Colo.; Dr. A. Hostetter, moved from Rockford to Los Angeles, Cal.; Dr. E. S. Hunt, moved from Rockford to Moab, Wash.; Dr. W. A. McDowell, moved from Rockford to Moab, Wash.; Dr. Sidney C. Miles, moved from Rockford to Indianapolis, Ind.; Dr. Penn W. Ransom, died April 2, 1910, Rockford; Dr. George W. Rohr, died May 5, 1910, Rockford. Total membership of society, seventy-two. Total members in good standing to include Dec. 31, 1910, seventy-one. Treasurer's report:

Cash on hand, Dec. 31, 1909.....	\$193.16
Receipts for 1910.....	275.50
Disbursements .....	407.13

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Balance and cash on hand, Dec. 31, 1910.....\$ 61.53

The next in order was the election of officers, as follows: President, Dr. W. H. Fitch; vice-president, Dr. A. C. Eakin; secretary and treasurer, Dr. Frank W. Hanford; censor, Dr. W. E. Park; delegate, Dr. Charles E. Crawford; alternate, Dr. W. S. Howell.



Dr. F. H. Kimball made a motion that owing to the growth of the society and the increasing duties of the secretary, that the secretary be paid \$50 from the funds of the society for his efficient services the past year. Motion carried.

A unanimous vote of thanks was extended to the officers of the society for their efficient services.

The retiring president expressed his appreciation to those who were active in promoting the best interest of the society. Adjourned.

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## Book Notices.

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COLLECTED PAPERS. By the Staff of St. Mary's Hospital, Mayo Clinic, Rochester, Minnesota, 1905-1909, Octavo of 668 pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1911. Cloth, \$5.50 net.

The gentlemen connected with the Mayo clinic, including the Mayo Brothers themselves, have appeared many times before different medical societies in the past few years with papers giving the results of studies made in that remarkable hive of medical and surgical industry. The publication of these papers has been scattered over the various medical journals in all parts of the country, and up to this time it has been practically impossible for any one to secure the results of the work in the Mayo clinics without a great deal of trouble. The publication of these papers in one volume is therefore a great service to the whole profession outside of the intrinsic value of the papers themselves. The subjects under consideration cover all parts of the body, and give the reader a good idea of the character of work being done from day to day at Rochester. No one having to do with a surgical problem can afford to be without this valuable volume.

DIFFERENTIAL DIAGNOSIS. Presented through an Analysis of 303 cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Octavo of 753 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net.

Dr. Cabot has written a work which should be studied by every practitioner in America. With the modesty of a great man he lays before the profession a profound study of presenting symptoms. He says the "*presenting symptom*" is comparable to a soldier who presents arms or to the presenting part in an examination in obstetrics. The complaints of patients—fragmentary expressions of the underlying disease—should be used as *leads*, and these leads can usually be followed to the actual seat of the disease. The method of case teaching has been used by Dr. Cabot for eight years at the Harvard Medical School, applying there a method long employed by the Harvard Law School.

It is distinctly refreshing to have such a book introduced into the library of the practitioner. It reads like a novel, and any one taking it up will be loath to lay it down. Dr. Cabot possesses a genius as a teacher, and any one who has not followed his teachings and writings is missing a wonderful opportunity for deep study.

## NEWS OF THE STATE

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### PERSONAL

Dr. Walter F. Wessels, Mendon, sailed for Germany, February 1.

Dr. Joseph M. Wallace, Aledo, is reported to be seriously ill with pneumonia.

Dr. Strother J. Beeson, Chicago, has left for a trip to the West Indies and South America.

Dr. Lemuel L. Silverthorn, Charleston, who has been seriously ill, is reported to be improving.

Dr. Christian J. Hartung, Chicago, was struck by a street car February 2 and seriously injured.

Dr. Christian H. Zollar, Granite City, has been appointed superintendent of the Granite City Lutheran Hospital.

Dr. David J. Davis, of the Memorial Institute for Infectious Diseases, has been appointed pathologist to St. Luke's Hospital.

Dr. Earl J. Brown, Chicago, was attacked near his home, January 23, beaten into insensibility, and robbed of money and jewelry.

Dr. Charles C. Kost, Dixon, has been appointed district surgeon for the Illinois Central Railroad, vice Dr. Abram L. Miller, resigned.

Dr. T. J. O'Malley of Chicago, a member of the staff of St. Mary's of Nazareth and St. Joseph's Hospitals, has been appointed by Mayor Busse as a member of the Board of Education.

Dr. D. W. Graham, formerly president and secretary of the State Medical Society, was recently operated on at the Presbyterian Hospital, for gall-stones in the common duct. His friends will be pleased to learn that Dr. Graham has made a rapid and satisfactory recovery from the operation.

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### NEWS ITEMS

—The Alton Medical Society has elected Dr. J. A. Cook, president; Dr. J. Bernard Hastings, secretary; and Dr. Waldo Fisher, treasurer.

—Dr. Elizabeth Cassidy, formerly of Vermont, was elected commissioner in Denver, Colo., at the last election, being the first woman to hold that office.

—The Iroquois Memorial Dispensary opened for its first clinic for tuberculosis patients, February 21. The clinic was in charge of Dr. Clarence L. Wheaton.

—An ordinance was passed January 30 providing for the purchase of land at North Fortieth and Bryn Mawr Avenues, Chicago, on which to construct a tuberculosis hospital.

—The Buffalo Rock Tuberculosis Sanitarium, near Ottawa, was closed November 1 and a receiver appointed on application of James Hopkins of Chicago. He holds a \$7,500 mortgage against the property.

—The budget of the University of Illinois, which amounts to \$3,551,000 asked to be appropriated by the present legislature, includes an item of \$200,000 for the maintenance of the college of medicine.

—Nearly \$13,000 will be available for the antituberculosis work in Illinois during the present year as the result of the Red Cross Christmas Seal campaign. The total number of seals sold in Illinois was 1,652,869.

—B. J. Crowe is said to have been fined \$5 and costs, amounting in all to \$9.25, in Freeport, February 14, for violating the section of the city ordinance which prohibits the promiscuous distribution of "patent medicine."

—George Griffith, Strasburg, an itinerant medicine vender, who was sued by the state's attorney for peddling medicine without a license, is said to have consented to settle without a trial on the imposition of a fine of \$100 and costs and has promised to go out of business.

—Dr. J. A. Roy, Lewistown, against whom a judgment is said to have been secured some time ago for practicing medicine without a license, and against whom a fine of \$100 was assessed, gave himself up to the sheriff, January 20, and will serve a sentence of twenty days in jail.

—Last month at a meeting of the stockholders and trustees of the College of Medicine and Surgery, Chicago, the last of the physiomedical colleges, the corporate name was changed to the Chicago Eclectic Medical College. It is stated that the school will hereafter be conducted as an eclectic college.

—The new free dispensary organized by the Springfield Tuberculosis Association was formally opened January 23. The dispensary will be opened from 10 to 11 on Monday, Wednesday and Friday mornings, and at the same hour on the first and third Saturdays of each month children will be examined and treated.

—The Missionary Sisters of the Sacred Heart of Jesus, Chicago, are erecting a new hospital to be known as the Columbia Extension Hospital for the free use of the deserving poor, regardless of race, creed or color. The institution is located at Lytle and Polk Streets and will be dedicated, it is expected, in April or May.

—A movement has been launched by Dr. W. J. Eddy for the establishing of a hospital at Shelbyville. Dr. Eddy states that \$10,000 has been offered for a hospital fund, and thinks that \$15,000 could be raised in addition. The matter will be brought before the Commercial Club, at its next meeting, for consideration.

—More than 200 physicians of Chicago have formed a Charles E. Merriam Club and elected the following officers: president, Dr. John M. Dodson; vice-presidents, Drs. Homer V. Halbert, Isaac N. Danforth, Albert J. Ochsner and James E. Stubbs; secretary, Dr. Ludvig Hektoen, and treasurer, Dr. Winfield S. Harpole.

—The president of the county board announced, February 14, the following attending staff for the Tuberculosis Hospital located on the county hospital grounds: chief of staff, Dr. Clarence W. Leigh, and members, Drs. Thomas A. Hogan, Clyde D. Pense, Frederick Tice, Arthur M. Corwin, Milton Mandel, and George B. Dyche.

—Dr. W. V. Guttery of Middletown, has been unfortunate in an investment in a coal mine at that place, and it now appears that the savings of a life-time have been lost. He has been obliged to take advantage of the bankruptcy law. His friends will sympathize with him in his misfortune.

—The final report of the chairman of the committee which had in charge the Charity Ball, shows that \$26,599.08 is the net sum to be distributed. Of this the Children's Memorial and Presbyterian hospitals are to receive \$5,500 each, the Alexian Brothers,' Chicago Lying-In, the Passavant Memorial and Provident hospitals, and the visiting Nurses' Association, each \$2,250, and the German Hospital, \$1,000.

—The Littlejohn College of 1408 West Monroe Street, Chicago, has brought mandamus proceedings against the State Board of Health in Cook County, because the board has refused to accept the school as a medical college in "good standing." Dr. James B. Littlejohn, secretary of the college, declares graduates have been denied permission to take the state examinations for licensed physicians. The school formerly was the "American College of Osteopathic Medicine and Surgery" and the state board has refused to recognize it because it was considered an osteopathic institution and not a medical college.

—The Dr. John Warner Hospital at Clinton is almost ready for opening. The delay is due only to the failure of some of the equipment and furniture to arrive. On the first floor of the institute are the superintendent's office, nurses' rooms, kitchen, dining room, reception room and men's ward, which latter is to be furnished by the Illinois Central Railroad. On the second floor of the institution are most of the private rooms, the woman's ward and children's ward. On the third floor the operating-rooms, dissecting-rooms, dressing-rooms and sterilizing-rooms will be located. The physicians of DeWitt County have decided to furnish the operating-room of the hospital.

—The physicians of Alton, with the indorsement of the Alton and Madison County Medical Societies, have undertaken a series of lectures on medical subjects to be given every two weeks for school children and their parents. The following will be the program of the lectures:

February 19—"Infectious Diseases: Invasion, Attack, How Controlled." Dr. James M. Pfeifferberger.

March 3—"Tuberculosis: Prevention and Care of Disease." Dr. J. B. Hastings.

March 17—"Diseases of the Eye." Dr. Fred W. Jones.

March 31—"Diseases of the Nose and Throat." Dr. George E. Wilkinson.

April 7—"Fresh Air and Exercise." Dr. N. Garland Taphorn.

April 21—"Sick Room Management." Dr. Homer W. Davis.

May 5—"Mental Defects." Dr. William H. C. Smith, Godfrey.

May 19—"Care and Feeding of Babies." Dr. Frederick C. Joesting.

May 29—"Care of Teeth." R. E. Cockrell, D.D.S.

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#### REMOVALS

Dr. H. N. Barth has moved from Chicago, to Rockford.

Dr. J. A. Logan of Murrayville has located in Tolono, Ill.

Dr. D. K. Pollock has removed from Little York to Albion, Iowa



Dr. L. P. Wineburg has removed from Lawrenceville, to Leland, Ill.

Dr. Wm. J. McClintock has removed from Springfield to Waycross, Georgia.

Dr. Rollo J. Grimes, formerly practicing in Marietta, has located in Jerseyville, Ill.

Dr. W. J. Marney, has removed from Granite City to 1548 Kedzie Avenue, Chicago.

Dr. Wilson Eubank of Farmer City has gone to Rhann, N. D., where he will practice his profession.

Dr. Rudolphi has sold his house and practice in Elliott and will leave the first of March for other parts.

Dr. Fred P. Crowder of St. Louis, Mo., has moved to Curran, Ill., and has taken the office of the late Dr. Redshaw.

Dr. J. H. Collins of Colfax has located at Wataga, Ill., after finishing a post-graduate course in the Chicago Hospitals.

Dr. Franklin Kelley, formerly of Kewanee, has opened an office in Green Valley, where he will practice his profession.

Dr. C. C. Ellis, statistician of State Board of Health, has resigned to take a position in the State Hospital at Bartonville.

Dr. Walter C. Bisson of Abingdon, Ill., will locate in Thermopolis, Wyo., where he has accepted a position in a sanitarium at Big Horn.

Dr. C. E. West of Lincoln has removed to Decatur, where he will take charge of the practice of Dr. S. L. Thorpe, who has been forced to take a rest for a time.

Dr. W. H. Holmes for some time in charge of the hygienic laboratory of the State Board of Health at Springfield, has resigned to accept a position as assistant physician on the staff of the Kankakee State Hospital.

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## MEDICAL SOCIETY NOTES

### RESOLUTIONS ON THE ABUSE OF MEDICAL CHARITY

WHEREAS, The members of the West Side Physicians' Club come in daily contact with those who abuse the dispensary and hospital charities; and

WHEREAS, This abuse of medical charity both dispensary and hospital affects the practice and income of the medical profession; and,

WHEREAS, The Chicago Medical Society Committee on Abuse of Medical Charity has outlined a method and is collecting money to install the plan whereby the United Charities of Chicago shall investigate all cases; and,

WHEREAS, At an open meeting of the West Side Physicians' Club, Dr. Breakstone, one of our members, has outlined a plan that has been printed in the bulletin which we think more practicable; therefore be it

*Resolved*, That it is the sense of opinion of the members of the West Side Physicians' Club that the Chicago Medical Society should reconsider their action and consider the plans as laid down by Dr. Breakstone; and be it further

*Resolved*, That these resolutions be spread on the minutes of the West Side Club and that a copy be sent to the Chicago Medical Society and a copy to the ILLINOIS MEDICAL JOURNAL.

(Signed) N. LEUTZ, M.D., Chairman.

SAMUEL METCOFF,

ADOLPH J. NEWMAN,

N. SCHOOLMAN,

ERNEST H. LOEWINGER.

## NEW INCORPORATION

—The Western College of Osteopathy, Chicago: capital \$1,000: to conduct a college of osteopathy: incorporators, Peter Adams Schwarz, D.O., Frank Joseph Schwarz, D.O., Amante Rougetti, D.O.

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## MARRIAGES

OSCAR D. WHALIN, M.D., to Mrs. Emma Maxwell, both of Chicago, recently.

LOUIS R. WAYMAN, M.D., to Miss Lavica Etherton, both of Murphysboro, Ill.

CHARLES F. ELY, M.D., Chicago, to Miss Leila Fairbairn at South Bend, Ind., January 27.

PHILIP FRANK SHAFFNER, M.D., to Miss Beatrice Melanie Weil, both of Chicago, January 18.

ADRAIN J. DEHAAN, M.D., East St. Louis, Ill., to Miss Clara Ziegenhein of St. Louis, January 24.

JAMES G. LAMB, M.D., Fisher, Ill., to Miss Elnora Larson of Voorhies, Ill., at Bement, Ill., January 4.

GEORGE EMMET KNAPPENBERGER, M.D., Macomb, Ill., to Miss Agnes Carnduff of Aetna, Ind., January 26.

DAVID HENRY WORTHINGTON, M.D., Aurora, Ill., to Miss Hulda Henrietta Bettcher, at Iowa City, Iowa, January 17.

AMOS WILLIS BALL, M.D., Rushville, Ill., to Miss Dorothy Chatham of Watertown, Ill., at Princeton, Ky., January 14.

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## DEATHS

JOHN A. FITZGERALD, M.D., was found dead in his office in Chicago Heights, January 23, from valvular heart disease, aged 45.

JOSEPH M. WALLACE, M.D., one of Mercer County's oldest physicians, died at his home in Aledo, Feb. 15, 1911, of pneumonia.

E. B. STEPHENS, M.D., of Lawrence, Ill., unconscious for three days as the result of a runaway accident, died in a hospital, Feb. 5, 1911.

JAMES FAITH, M.D., Eclectic Medical Institute, Cincinnati, 1869; died at his home in Palmyra, Ill., January 18, from pneumonia, aged 69.

FRANKLIN BEDFORD, M.D., Rush Medical College, 1873: a practitioner since 1865; died at his home in Maple Park, Ill., January 15, aged 81.

L. D. FOREMAN, M.D., of Peoria, while repairing a leak in the roof of his house, fell a distance of thirty feet and broke his neck. Death was instantaneous.

JOHN C. DAVID, M.D., Hahnemann Medical College, Chicago, 1878; died at his home in Sandwich, Ill., February 2, from cancer of the esophagus, aged 62.

# ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

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No. 4

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## ORIGINAL ARTICLES

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### A CHAPTER ON THE PIONEER PERIOD OF MEDICINE IN ILLINOIS \*

O. B. WILL, M.D.  
PEORIA, ILL.

On receiving from this Society the honor of an invitation to be its guest this evening and participate in its work to the extent of presenting some topic associated with the medico-historic interests of this state, it immediately occurred to your speaker that a perfectly appropriate theme would be the experiences, in a developmental rather than personal sense, of the first group of medical representatives to take up their abode in the central Illinois valley. Associated with that thought was the eminently pertinent reflection that the city and immediate locality from which the writer comes would necessarily occupy a conspicuous position, at least chronologically, at the head of any inclusive narrative of medical events in the northern half of the commonwealth, and hence be entitled to recognition as the veritable cradle of professional effort in that vast territory.

While to many unacquainted with the actual facts of the situation this assertion may sound strange, the records testify to the truth of the statement. How a point 100 miles west of Chicago became the most important settlement, and for at least fifteen years remained the business and professional emporium of a section of country so apparently accessible as northern Illinois to the eastern sources of immigration, at first seems inexplicable, but is, after all, easily explained when one understands the course or routes of immigration, as well as its sources. In the circumstances and conditions of transportation lay the secret. The features controlling such advancement were responsible for the early prominence of Peoria and the central valley region in professional as well as other directions, and enabled it to be the first municipality in the state to indulge in the luxury of collective professional effort to advance mutual material interests, as well as those of the science and art of

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\* Read at the meeting of the Society of Medical History of Chicago, Feb. 24, 1911.

medicine, by organizing a live, working medical society which has remained in uninterrupted existence down to the present time.

In order to aid the understanding in acquiring a proper perspective of these events, it may be said that when your Daniel Brainard was but a lad of 10 years, at least two members of the profession he loved and adorned were already located at Fort Clark, and when Chicago was first incorporated as a village half a dozen or more doctors were vying with each other for popular favor at Peoria. Anything, therefore, pertaining to that early struggle for professional development and advancement, even though of intensely local coloring, ought to be of interest to, as it is the common heritage of, the profession of northern Illinois who have taken up successively the burden of duties and accrued problems of those who have in the process of time fallen from the ranks.

The experiences of these new-comers were more trying than customary to the vicissitudes of border-life, because of the exceptional conditions of immigration referred to. These latter were peculiarly such as to bring together an unusually heterogeneous type and quality of humanity, professional as well as general. For, during the period of which this description is a partial reflex, from 1818 to 1848, Illinois was *the* frontier state of the nation's great northwest, and Peoria its frontier settlement. The latter was made such from the fact that the most feasible transportation highways were the rivers, and while the extreme southern end of the state was occupied by straggling settlers, mostly from across the Ohio in Kentucky, the interior was invaded over two routes having practically no connection with the settlements below. The first settlers at what was then called Fort Clark, which was built after the massacre at Fort Dearborn in 1812, came up the Illinois River from points on the Mississippi, such as St. Louis and further down. But the later contingents sought a shorter route from the east and middle south down the Ohio River to the mouth of the Wabash, thence up the latter stream to old Vincennes, and even as far as Fort Russel, where Terre Haute, Ind., now is located, and from there overland to Fort Clark, where the Illinois River could be conveniently crossed, and where needed supplies could be secured. There were no intervening stopping places, because the long stretch of sun-burned prairie offered no inducement to those adventurers, even if it is now worth \$200 per acre. It was considered by these travelers practically a desert, and only here and there in some nook by an occasional creek could any man be induced to halt and arrange to call it home. But when the Illinois valley was reached, and its beauties spread to the wanderers' gaze from the tops of the bordering bluffs the temptation for further pilgrimage vanished, and Peoria began to be made the center of a thriving community. This at first attenuated but gradually enlarging stream of immigrants from the southeast met that from St. Louis and directly southern points. It was these two vital currents which brought into Peoria its peculiar conglomeration of humanity. The one from the east gathered up a variety of medical men, one from here and another from there, no two from the same locality or with the same antecedents, ideals, traditions or training. Men of refinement and education, of ortho-



dox principles, and those of irregular and sectarian predisposition and mould. Men imbued with the professional, social and political instincts of the slave states and the south, with those of northern sentiments and sympathies; all gathered into the vortex of the small human whirlpool at Peoria, presenting an admixture of materials and forces from which it is not difficult to surmise something might happen. And it did. The first happening came when the impact of these two currents approximately deflected on itself, that from the southeast, turning it back up toward the source of the Illinois River, and finally to the lower end of Lake Michigan where, meeting the tide already setting in from the east over the more northern route, a perfect maelstrom of human activities was created at Chicago, in comparison with which the similar movement at Peoria was but a tiny eddy. Nevertheless, the latter was for many years the proud possessor of eminence and, professionally speaking, worked over her varied medical acquisitions in a way to her everlasting credit. Consequently, another of the things that happened was the regeneration, or evolution, of these turbulent elements into a class of medical practitioners of which any municipality might be proud; the adoption of tactics from the results of which many a useful lesson might be drawn; and which was followed by a sort of centrifugal movement which scattered throughout the immediate territory a type of doctor that for more than two generations controlled the professional situation, and has not yet by any means lost its influence on either the professional or the public conception of what a physician should be.

With such a background of information it is the writer's purpose, from the memory of many years' personal acquaintance with most of the original actors in the professional drama of pioneer days, to present something of a picture of the ups and downs, and expedients, and achievements which marked the origin and likewise the progress of medical events in the central Illinois valley, especially the Fort Clark region, for a period of nearly three decades.

While small settlements, as before stated, had been made in the extreme southern end of the state and along the line of immigration near the mouth of the Wabash, with here and there a representative of the medical profession, the very first regularly ordained physician to locate for the practice of medicine in any portion of the territory from Springfield east to Indiana, west to the Mississippi, and north as far as one cares to think, was Augustus Langworthy, who settled in Peoria about 1822. That the doctor had poor picking pecuniarily, even as late as 1825, may be deduced from the fact that in all the country described there were but 1,236 settlers, including women and children. Doctor Langworthy, although one authority says he was not popular, seems to have been a very worthy man, well educated, of good ability, and that he was tenacious of purpose is abundantly evidenced by his continuing in practice in Peoria for some thirty years, subsequently retiring to a farm in Bureau County where he died in 1868.

Doctor Langworthy's only possible rival for the distinction of priority of residence was Alexander Wolcott, physician of the post at Fort Dearborn, but who in 1823 identified himself with the civic affairs of Chicago by marrying a Miss Kinsey, daughter of the reputed first resident of that city. That Doctor Wolcott even then exemplified, if he did not actually evolve, the subsequently proverbial Chicago instinct to take everything in sight, was shown by his not only cornering the matrimonial market, making himself the first Chicago bridegroom, as well as surgeon of the military post, but in his being in 1827 commissioned justice of the peace for the Chicago precinct of Peoria County. As indicating the cordial relations at that time existing between the two places it may be here said, parenthetically, that the first marriage ceremony thus celebrated in Chicago was conducted by Squire Hamlin of Peoria, who carried the license with him and stopped at Chicago for the purpose while on a government mission to Green Bay, and on his return spoke very highly of the doctor as a scholarly, polished gentleman, a graduate of Yale, and an ornament to his profession.

But our own Dr. Langworthy was not so very slow, for he soon became commissioner of highways for the county, was at the head of several successive grand-juries, surgeon of volunteers rendezvoused at Peoria during the Black Hawk War, and established the first fee-bill probably on record in the state by securing payment of one dollar each for five successive visits to a prisoner in the old log jail, and collecting by law from another delinquent patron an account of twelve dollars at the same rate, thus also establishing the useful precedent of county responsibility for medical services rendered to paupers.

But the real history of medicine in that section of Illinois began with the arrival in the early thirties and somewhat later of a group of talented, academically educated and professionally well-trained young men who came in on the then rapidly increasing tide from the east and southeast. The first of this interesting coterie to arrive at Fort Clark was Rudolphus Rouse, in 1831. He was the presiding officer at the preliminary meeting for the formation of the Illinois State Medical Society, and was its third president. He was likewise one of the organizers of the Peoria City Medical Society, and at one time a lecturer in the New York Medical College, New York City, from whence he came. The next member of this original group to arrive within the year was Joseph C. Frye, from the University of Virginia, and Ohio Medical College, the valley's representative at the organization of the A. M. A. in 1847, and the most renowned therapist in central Illinois. Then in rapid succession came Francis A. McNeill, who was distinguished in the fact that he cared for both soul and body: in other words, he was a Methodist minister as well as a practicing physician, preaching on Sunday and practicing medicine during the other days of the week. He was one of the original members of the local society, and assisted at the formation of the state body. Peter Bartlett, formerly secretary of the New Hampshire State Medical Society. John Arnold, a man who, although of delicate constitution and poor health, was not only a physician of high standing, but a politician of note, a personal

friend and confidant of Abraham Lincoln, who appointed him United States consul at St. Petersburg, Russia, during the trying period of the Civil War. John Murphy, a scholarly man, graduate of Edinburgh University, and whose penmanship, as secretary, is emblazoned on the first pages of the local society's minutes in 1848. Elias S. Cooper, who was said to have been the first man to use chloroform as an anesthetic west of Pennsylvania, who was Dr. Joseph Freer's competitor as candidate for appointment as demonstrator of anatomy in Rush Medical College; who went to Paris, at that early day, to pursue the study of surgery; who built the first hospital in Peoria; was a member of the local and state societies, and later removed to San Francisco where he became the most renowned surgeon on the Pacific slope, and in honor of whom was named the present Medical Department of the University of the Pacific: Cooper Medical College. J. L. Hamilton, who did the first successful laparotomies ever attempted in his home city, at a time when that meant abundantly more than it does now. J. T. Stewart, a noted botanist and surgeon of the Civil War. E. M. Colburn, a man of splendid education and culture, president for many years of the Peoria Scientific Society, and a valued and influential member of the American Association for the Advancement of Science. John Niglas and Robert Roskoten, involved in the revolutionary movement in their native land, who escaped from prison through the aid of compatriots, fled to Spain and from thence to the United States and Illinois, whence they won their citizenship by doing valiant service in the Union cause during the Civil War, the latter as a brigade surgeon.

Aside from these members of the profession especially distinguished outside as well as inside their technical field, were a number of others, active and progressive, whose names are on the early roll as collaborators in the field of Illinois valley medicine. Among these Robert Boal, long designated the "grand old man" of the Illinois profession, one of the organizers of our state society, of which he was later made president; formerly demonstrator of anatomy in the Ohio Medical College, four times elected to membership in the state legislature, friend and political adviser of President Lincoln, and lacking only eighteen months of rounding out a century of life. The following tribute to his colleagues, rendered at the semicentennial of the organization of the Peoria City Medical Society, when he was in his ninety-second year, is worthy of reproduction:

Outside the City of Peoria, the pioneer doctors who were in this part of the State in the forties were Dr. Perkins of Tremont, Drs. Wilson and Wood, Sr., of Washington, Dr. Harris of Groveland, all of Tazewell county, Drs. Whitmire and Zeller of Woodford county, Drs. Thompson, Thomas, John and Charles Baker of Marshall county. Of these only four are now (1898) living, Dr. Charles Baker of Henry, Drs. Thompson and Thomas of Lacon, and myself; and strange to say, all are residents of Marshall county. In this city, Drs. Rouse, Dickinson, Frye, Andrew, Arnold, McNeill, Cooper and Murphy, with one exception have all gone, Dr. Murphy being the sole survivor. In the little dingy office of Dr. Frye, with its hard pine floor, its three or four stuffed wooden chairs, the men I have named met and organized the society whose semi-centennial we commemorate to-night. Dr. Dickinson, who presided, was a man of great nobility of character, of commanding presence, a high sense of honor and purity of life, a popular and success-



ful physician. Dr. Rouse was (if I am correctly informed) the second doctor to come to Peoria. In some things he was peculiar and in others eccentric. He was at times curt and abrupt, generally genial and cordial, and with a keen sense of humor. During his last illness, which was chronic and lasted for many months, he designed a monument for himself and family. He watched with interest its construction and erection and rode out to Springdale cemetery every few days when the weather permitted to note its progress. He often expressed his fears that he would not live to see its completion, as he wished to see how it looked before he died.

Dr. Frye had an extensive and lucrative practice, he was an omnivorous reader of literary and medical books, possessed a remarkably retentive memory, and was an entertaining conversationalist. Like others, he had a hobby. It was the most implicit confidence in the curative power of medicine. Dr. Andrew was of imposing presence, muscular as a prize fighter, careless in business, seldom or never sending a bill to his patrons. If he needed money he would ask for it from the first patron he met, and he always got it. With Dr. McNeill I was only slightly acquainted. He was a minister of the Gospel as well as a doctor. My relations with Dr. Arnold were more of a political than professional character. He was a candidate for the State senate and I for the house. We traversed together the three counties comprising the district, so that I knew him better as a man than physician. He was appointed Consul to St. Petersburg, but served only a short time as the climate was too rigorous. A few years after his return he died of tuberculosis. I would be recreant to a friendship of forty years with Dr. John G. Zeller, of Spring Bay, did I not stop to pay a tribute to his memory. He lived in a hamlet that had scarcely risen to the dignity of a village. His ability and acquirements would have secured for him more congenial surroundings had he desired, but he did not. He was not only doctor in the community in which he lived, but their counsellor and friend. They loved him while living and mourned for him when dead.

For the third of a century I have known Dr. Murphy. Through all these years I have had intimate social and professional relations with him. Our friendship has run throughout all these years, like the current of peaceful rivers, unvexed by a wave of anger, undisturbed by a ripple of ill will. For his sorrow and bereavements I have sincere sympathy. \* \* \* Do you wonder that for this old time friend, polished gentleman, fine scholar, accomplished physician and sole survivor of the founders of this society, borne down with weight of years and sorrow, that I feel the most profound sympathy? For those pioneers who have "crossed the river" and have solved the mysterious and perplexing problem of human destiny I have tender memories.

This list is fitted to best illustrate the great variety of talent and force of character of those who constituted the chief representatives of orthodox pioneer medicine in the central Illinois valley, as distinguished from the unorthodox or sectarian mass of individuals whom the writer prefers grouping together as a whole, since with few exceptions they were men of no distinction other than that entailed in the adoption of some irregular creed. Nevertheless, as a body they did much toward securing recognition for many of their ideas and methods in the practice of the time.

With this contingent (a galaxy of talent to be proud of) began that revolutionary and evolutionary movement outlined in a preceding paragraph. Each member, conscious of his own dignity and ability, firmly fixed in his opinions, some representing the brilliant but fiery sons of the south, others the calmer but none the less stubborn product of the North, and yet others tainted with the rebellious spirit of Europe's oppressed, mixed with irregular characters indigenous to the then middle west; independent, self-reliant and aggressive, it may not be wondered there



was strife and contention and discord, even if nothing worse. Such a state of professional feeling, which to-day may seem absurdly unworthy and childish, was not at all uncommon for that period. At a much later one, in truth, the writer himself can well remember many personal encounters. Such forms of disagreement were the result of hot-headed criticism, jealousy and misunderstanding, mostly the latter, since fraternization was not a special characteristic of the days when medical men were nominally as well as actually "competitors," and as such had their own problems to solve: problems presenting somewhat different aspects from those of the profession of to-day. The period was one fraught with illogical, disconnected assumption in the science of medicine, and the art had not yet shed its swaddling-clothes of uncertainty and superstition. Blind science and empirical art; a mismated couple, hand in hand! And so the ultra orthodox, and the equally ultra heterodox games went merrily on. Even a quarter of a century later than the maximum limit of the period under consideration the writer himself was taught to rely mostly on hereditary and grotesque formulas, if he could not adopt some one of the several "systems" in vogue, and when finally formally born into the profession was clothed in a therapeutic garment of many colors; baptized, so to speak, in laudable pus, and sent blind-folded, as it were, in search of aids to the *vis medicatrix Naturæ*.

But these "competitor" professional forefathers of ours had other problems to solve aside from those directly associated with the technicalities of their calling. Competition was keen. At this distance from the scene of action we are often disposed to think that philanthropy was the dominating virtue of our medical ancestors. But while those of self-sacrificing zeal were plentiful, and show well in song and story, they were fully alive to the material needs of life, and the struggle for existence was even more keenly felt than it is now. Fifty years ago the writer asked one of these old men in a small village what he considered as "success" in the practice of medicine. His reply was "a living for myself and family, something with which to educate the children, and \$500 a year for the proverbial 'rainy day.'" The same query was made of a city doctor, and he promptly answered "ten thousand a year." It was a disillusion that came with so direct a measurement of professional "success" in dollars and cents, but the spirit is with us yet despite poets and romancers. Likewise the same need existed then as exists now for some means of making oneself conspicuous in the public eye. And therein, as one of the original pioneer professional brethren used to tell the writer, the horde of irregulars, by whom the lack of legal supervision in the old days permitted the regularly educated physicians to be surrounded, had a great advantage. They always had something to talk about, and were continually expatiating on the merits of their particular "school" and its special doctrine. They were the veritable prototypes of the specialists of to-day, and on the whole perhaps no more dangerous.

While the orthodox physician of that time continued to grope in the darkness of uncertainty for some really scientific key to the mystery of a successful therapeutics, these independent, self-satisfied thinkers and

exponents of Nature came forward with numerous theories and hypotheses as practicable substitutes for the real thing. Whether it was the so-called eclectic, physio-medic or botanic, it mattered not. The essential feature seemed to be that symptoms are the infallible language of distressed Nature, and when accurately read and properly interpreted were a sure guide to not only the pathology of any case, but to such treatment as empirical demonstration had found capable of meeting the indications. While that was the central thought of what might properly be called the indigenous therapeutic philosophy of the time, there was considerable diversity of opinion among the followers of the main doctrine respecting the relative utility of reputed measures. In that fact lay the reason for the great variety of sects. Every clique of these sectarian followers had its therapeutic specialty, which in their hands and with their ingenuity had as much publicity-value as any specialty of the present day. The members of the regular profession, while at constant variance among themselves, were in the main loyal to their sense of personal dignity and the traditionary principles of ethics. Nevertheless, in a country and among a people in general having no respect for such refinements of sentiment, they were placed at a great disadvantage. Absolutely surrounded and pervaded by low professional influences, they found themselves burdened with a great task. To protect both themselves and the public from the inroads of a growing class of charlatans, the outgrowth of the prevailing professional libertinism, was a proposition of no mean order, especially where no governmental interference was exerted to control or supervise the educational qualifications of practitioners, or even took any cognizance of the public welfare. It was with respect to this state of things that the proposition was broached to make some effort at control. Appeal to the state under existing conditions was practically useless. Only some local educational influence or social restriction seemed to offer any prospect of relief. It could not suffice to say that the superior educational qualifications of these men were in and of themselves a sufficient protection, because as a matter of fact they were not, and never have been when pitted against designing fraud. At this particular time especially, one man's experience and opinion in diagnosis and treatment had about as much weight as another's. In fact the more intelligent portion of the sectarian breed had a distinct advantage in offering something nominally tangible in the way of diagnostic and therapeutic indications. Their theories and the methods based on them were alluring alike in their basic simplicity and ingenious logic, which no one was in a position to satisfactorily refute, even in the face of occasional discrepancy in results, because common alike to all "schools" of practice.

But superior intellect has, after all, a habit of gaining its point in one way or another. In this local strife for supremacy attrition of personal elements gradually was wearing away the rough corners of dispositions, and tolerance began to take the place of arrogant vanity. The policy of ignoring the sectarian professional parasites had proved a failure, while contempt and scorn had met like defeat, as they always will in such cases by serving to arouse the popular antipathy through claims of

persecution. An unusual degree of *rapprochement* had been steadily if slowly manifesting itself among even the most violent tempers, and a similar degree of strategic condescension manifested itself. Informal meetings were held to consider the situation, gradually increasing in attendance. At the suggestion, finally, of some wise heads it was concluded to adopt a pacific policy toward at least the chief and most influential exponents of these specific doctrines, and gradually, through that persuasive influence which is always generated and cultivated by honest and frank association, lure them to surrender something of the aggressively sectarian in their habits, and join the regular brethren in an effort for personal and professional aggrandizement. In other words, the old idea of exclusiveness in professional association on the part of the regular bred doctors was to be minimized and an era of cooperation among all fair-minded and respectable members of the profession attempted.

This proposition of conciliation between the warring professional representatives at that early day was naturally a long time in maturing, because of opposition to any fraternization with men of such varied professional hue as those with whom the regular faculty would thus be brought in contact. However, by dint of perseverance on the part of the far-sighted few who could see in the consummation of such a movement a partial solution, at least, of the difficulties under which the profession were laboring, and especially in view of a proposition to found a medical college, after the failure of the first attempt of Drs. Brainard, Blaney and their few associates in Chicago, consent of all was secured, and the scheme was quietly launched. It was hoped by its projectors to thereby secure some sort of controlling influence over public opinion, and by that means lessen the evils of unbridled license in the practice of medicine. Thus did that group of resourceful professional progenitors of ours anticipate by some sixty years the action taken by the profession within the last decade.

A series of conferences was planned, in which matters pertaining to the welfare of both the profession and the public were discussed with avidity, and to which were invited those honest adherents of irregular medicine who really believed what they preached and practiced, and yet were considerate enough of their own self-respect to indulge in no blatant pretensions. The result was in some respects decidedly unexpected. The idea seemed to take immensely. The conferences thus inaugurated became so popular that they spread throughout not only the home county, but adjacent counties, and even up to as late a date as forty years ago, the writer himself attended a number throughout the country, and never enjoyed himself more, or profited more, in his professional life. Not only were technical subjects discussed, with the vim and ardor and honesty which usually characterizes the proceedings of small assemblages, but the various sectarian doctrines and methods were likewise taken up and considered from every point of view. Any man of any particular faith within reach was given not only a generous, but hearty welcome and his expositions listened to with that interest and respectful consideration which is always exhibited by those who are seeking the truth, from what-



ever source it may be derived, and who consider every honest human experience, thought and ingenuity, a legitimate field for serious investigation, particularly at a time when, as then, every one was searching earnestly for some tangible clew to the unknown. But one peculiar effect of all this, and that which for so long a time made itself conspicuous in the medical affairs and professional attitude throughout that section of the state, was the evolution of what might be called a mongrel, but none the less efficient, type of medical practitioner; one that yet prevails to some extent, and whose representative when arguing the subject is ready to contend that the scientific and practical developments of the last quarter of a century are but in line with, and a demonstration of, the approximate accuracy of the very principles of guidance he had been following for the previous thirty or forty years. Because, be it remembered, those early days were the days of preceptors, when values were instilled, and handed down through successive generations of student practitioners.

In Peoria a surprising liberality of sentiment and practical harmony were gradually developed and maintained. Half a dozen or more of the most prominent practitioners of sectarian persuasion, especially homeopaths and eclectics, and others with similar leanings, were of the number who finally established a sort of aristocratic circle of defense and offense, and thereby accomplished an immense amount of good for themselves and the general public, by curbing, through personal and collective influence, the arrogance and pretence of the baser sort. It was to that act that Charles Ballance, a local historian about 1870, referred when he wrote: "The laws of Illinois do not prescribe who may and who shall not practice medicine. To remedy this evil, certain physicians of Peoria, on the fifteenth of April, 1848, formed themselves into a medical society, which has been kept up until this day."

As a matter of fact formal action was decided on when Dr. Joseph C. Frye, who was the central Illinois representative at the meeting in New York to organize the A. M. A., on his return gave such a glowing report. Thus in the following April, for the first time in Illinois history, a city medical society became an accomplished fact.

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## HYGIENE IN SCHOOLS \*

LLOYD M. BERGEN, M.D.  
HIGHLAND PARK, ILL.

The idea of a joint convention composed of teachers, institute workers, physicians and others interested in public health improvement, appeals to me as I believe it does to all of us as a well directed effort toward unifying and harmonizing our attempts to better the physical conditions of mankind.

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\* Read before the joint meeting of the Lake County Medical Society, Lake County Teacher's Association and the Lake County Tuberculosis Institute, under the auspices of the Educational Committee of the Lake County Tuberculosis Institute at Deerfield Township High School, Highland Park, Ill., Jan. 21, 1911.



I can assure you of the teaching profession in particular, whom it is my privilege to address, that you may recognize in the presence here of representatives of our medical society, a genuine desire on the part of the physicians of our county to cooperate with you and assist you in every way in that portion of your work pertaining to the physical welfare of our county and city schools. On the other hand, we of the medical profession recognize in you, and I state this without reservation, our greatest of all assistants and cooperators in the advancement of public medical education and disease prevention.

If it be true as we believe that disease is in the main a direct result of human ignorance, then our hopes of disease prevention must depend on the acquisition of wisdom; and a failure on the part of any state or nation to encourage public education along the lines of sanitary and hygienic instruction must result not only in race deterioration but even in a decline of civilization itself.

Not only do the hopes and aspirations of mankind toward achieving broader and higher planes of life but the mere struggle for existence itself depends upon intelligent effort toward physical preservation. The strength of any nation, civic, economic and industrial, remains absolutely commensurate with and must depend on the individual health of its citizens. The world powers of to-day are realizing more than ever before that public health is a tremendous asset, of commercial and protective value; and our own national government is beginning to realize, all too slowly perhaps, its obligations toward its citizens in the protection and safeguarding of the lives and health of the people.

We have awakened to the fact that the vast majority of human disease, with the resulting disability and enormous loss in industrial value, is capable of prevention. We have come to know that with our present knowledge and with an intelligent enforcement of the health laws now enacted we could add fifteen years to the average human life; but we must also recall the fact that health laws do not enforce themselves and that competent sanitary legislation, no matter how wisely or comprehensively constructed, must remain utterly powerless and inadequate unless it be preceded by a broad and practical public education, broad enough and comprehensive enough not only to create an intelligent and universal demand for the enforcement of existing law in its letter value; but to appeal instinctively to those higher unwritten principles of human right and human justice which we as a free thinking, liberty-loving nation must recognize and respect.

Still further than this, I believe that in these later day efforts to interest and educate public sentiment in civic and social health problems, we hope for and may attain something more than mere physical benefit. In united effort of this character toward mutual betterment widely separated individual interests are united and there are unconsciously fostered those rarer elements of human love and sympathy for fellow man which must make for a truly higher type of civilization and a better world in which to live.

The statement that "all men are born free and equal" if applied to man's mental and physical life equipment, becomes a falsity. We in our work as physicians and you as teachers are brought constantly in contact with those whom Nature has placed here in our midst, launched in life with a terrific handicap; and it is particularly in the interests of those on whom the sins of generations of physical, mental and moral shortcomings are being visited that we are striving to-day to create conditions of fairness that shall place them more nearly on an equal footing with their more fortunate companions.

Experience has taught us that in order to correct mental or moral obliquity in an individual, man or child, we must correct first of all the physical. Hippocrates must have known something of this centuries ago when he taught that "where there is love of medicine there is love of mankind"; and this is one of the profoundest truths emanating from any wise man of any period. Kant and Descartes taught that not mere physical benefit but refinement and culture as well must come from the teachings of medicine in its broader sense.

It is needless even before an audience composed chiefly of the laity for me to more than allude to the tremendous advancement made by medical science during the past two decades toward solving definitely and scientifically many of the immediate and remote causes of human disease; a work already magnificent in its achievement and yet if we read aright still in its infancy.

It is this modern method in laboratory work that has led directly to a world-wide public interest in disease warfare, and we find in this as in most topics, that the vast majority of intelligent people develop an acute interest just as soon as they understand. Until almost the present time the medical profession has attempted single handed to impart this knowledge, and this same profession must still in the very nature of things remain at the head of the work; yet without some broader media for the transmission to the general public of the teachings of hygienic and sanitary science the sphere of active work must remain a contracted one indeed.

We have learned through past experience that there are two broad avenues through which practically every intelligent citizen of the United States may be reached. The first of these consists of the public press; and through systematic contributions to our great dailies, weeklies and various magazines, of well selected readable articles, a vast amount of preliminary work may be accomplished. The ideas so disseminated are fruitful in a way, and yet they cannot bring about lasting systematic teaching such as we desire and must have in order to build up a permanent public education.

We must turn then to the other great channel, through which to convey this knowledge; the one which we believe offers the only opportunity for a thorough consistent course of instruction. This consists of the vast army of public instructors of youth in our grade schools, high schools and colleges. I have named these in their relative order of importance, since we must concede that in this, as in the study of most vital subjects, the

younger the child who receives such instruction, the more lasting the impressions remain.

During the first eight years of public school life, the child is for practically six hours a day under state control and receiving compulsory education; and this comprises the only period in that individual's life when it may be obliged to learn something regarding the preservation and protection of its own physical interests and its moral and legal obligations toward the individual and community interests of others. This same period in its life begins with the most impressionable and receptive age; a period when the mind is still unhampered; when concrete ideas are quickly grasped and where impressive instruction leaves a permanent imprint.

This then is the period when a simple yet broad and correct foundation for future instruction in physical race improvement should be laid. And no child is too young to receive such instruction.

In adopting this line of work in your schools, you as teachers, must hold as your first object the physical individual betterment of the pupils intrusted to your care. You study to aid them in the correction of their own weaknesses and to place those possessing such defects as nearly as possible on an equal footing with others; and yet you must not lose sight of the more important fact that this work is destined to be more far reaching than the present time and immediate needs of those whom you are striving to aid. The instruction given by you will be carried to the homes; to parents and older brothers and sisters. Not only your pupils, but the families from which they come observe a certain respect for advice which comes from the teacher. Be careful then that such teaching is not given at random; avoid above all else gross exaggeration of evils, which may lead to discredit of your work in this department when repeated to older and perhaps wiser heads. Do not attempt a definite explanation of a hygienic subject unless you yourself have studied it sufficiently to have a clear understanding and can speak with positiveness. The importance of accuracy in this will be the more appreciated when you recall that you are imparting knowledge which should in the years to come, when these same pupils become parents, create a generation which shall evince a keener interest in the physical lives of their own children and will lessen materially the obstacles and embarrassments of your future successors.

It will require no argument of mine to convince the ordinarily observant school instructor of the ruinous effect of physical neglect in school children. You have seen over and over again, probably all of you, the typical adenoid child, with its habitual mouth breathing, narrow jaws, discharging nostrils, and mask-like, expressionless countenance; you have seen such a child plodding along irresponsively; dull, stupid, apathetic; receiving reluctantly about one-fifth of the educational benefit which the state owes it; retarding the work and advancement of thirty or forty other pupils; and going forth into life with little or no advantage over the schoolless child.

You have seen, all of you, the pale, anemic and tubercular pupil in characteristic attitude: the head resting at times wearily on the hand. You have all seen children apparently stupid because they could not hear quickly; dull, because through hypermetropia they could not see words and figures clearly and who, because of embarrassment, frequently guess at answers. You have seen the myopic child, who holds the book close to the eyes in reading or studying, and who develops eye weariness, mental fatigue and headache following prolonged effort of this sort.

Some of you, at least, have seen schools closed and a community socially and industrially paralyzed almost, through sweeping epidemics of contagious disease: when, had your pupils been trained to report certain symptoms promptly and had you yourselves been trained to recognize the danger marks of disease; or had there been systematic school inspection by a competent physician, such a calamity might have been averted.

Whenever a child under your care appears distinctly below its classmates in intelligence and is making distinctly unsatisfactory progress, you may be certain that one of two conditions is present; either this pupil is suffering from an inherited congenital deficiency in intellect, or there is something radically wrong with its physical machinery.

In solving the problem of this child's deficiency, be absolutely certain that you have excluded every possible physical defect before classifying such an one as hopeless or incorrigible. Remember that the simple removal of adenoids and enlarged, diseased tonsils has restored thousands of youngsters to really brilliant careers; that the correction of various forms of deafness and eye strain has made useful citizens out of truants and shirkers; that open windows and more nourishing food in the home have been known to correct laziness and immoral tendencies.

Neither the medical profession nor the public expects of you a refined diagnosis in these cases; but, as those to whom has been entrusted the educational welfare of these children, you should possess sufficient general medical knowledge to recognize any gross physical deviation in a child; to at least rudely classify their defects and refer them to the school physician or to their own family physician for further examination. I may be permitted to speak, I believe, positively and knowingly when I say that the average public school instructor possesses a regrettable lack of knowledge regarding these things; and many of you present here to-day might in the past have saved not only the physical suffering and educational failure of some pupils, but might have saved yourselves hours and days and weeks of mental aggravation and nerve-wrack had you possessed a simple working knowledge of physical defect in school children.

I say to you then, if you are not already doing so, prepare yourselves thoroughly in this department of your school work, for it is a department, and one which in the immediate future is destined to become more and more a part of your armamentarium. The subject is not an intricate or difficult one, and with your opportunities for daily practical application of this information, you will find it truly interesting and satisfying. You should be prepared to speak in the school room, just as positively and just as confidently regarding the evils of unclean mouths—diseased



teeth and adenoids—as you would regarding a problem in arithmetic or the construction of a sentence in grammar.

Train yourselves first. Become familiar with these conditions; and once having trained your own powers of observation, you will be surprised to find how easy it is to recognize physical deviations from the normal. In fact, with a little practice and interest you will find that any serious defect in a pupil will literally force itself upon your notice. I believe that every one of you will find in your own home district a physician who will gratuitously and gladly aid you in these studies, should you require it.

Having trained yourselves, then, train the pupils under you. Impress on every child, no matter how young, the importance to itself and others, of reporting to you promptly a sore throat, a headache, an inflamed eye, a skin eruption, enlarged or tender cervical glands or any other symptoms of acute illness. Begin at the earliest age, in the lower grades, to teach in a simple way, civic and social responsibility in public health matters. Explain quarantine regulations and the conditions which necessitate them in contagious diseases. Show just why the convenience of the individual must become subservient to the community welfare. Appeal to the spirit of civic pride and national patriotism, which is easily awakened in even the youngest mind. Continue this line of teaching throughout the succeeding grades and high school course, and you will graduate boys and girls well equipped with life-long principles of the importance to self and nation of physical right living.

Little informal discussions and mutual conversations upon such subjects as "Dirt and Disease," "Care of the Teeth" (including the importance of these organs as an aid to digestion, and the method by which diseased teeth serve as an atrium through which injurious germs gain access to the system), "The Dangers of Careless Spitting," "Flies, as Carriers of Disease," "The Value of Bathing, for General Cleanliness and to Aid Elimination of Injurious Waste Material through the Sweat Glands."

Preach the gospel of fresh air in sleeping-rooms at night. Tell them why. Health maxims and stilted golden rules in mere words impress no one seriously, children least of all; but the moment a child really understands a subject of this sort, its interest is aroused and it begins forthwith, in its own way, to reason regarding it. Take advantage of occasional school happenings in connection with illness to illustrate the value of such instruction.

There are undoubtedly to-day thousands of public school instructors who have really no intelligent ideas regarding child psychology and physiology. By far the greater portion of friction between teacher and pupil, in and out of class-room, may be traced back through nervousness, to physical causes; causes perfectly capable of demonstration and correction. The average physically normal child is rarely obstinate or rebellious and seldom indeed do instances arise in which intimidation or blind physical subjection are not only utter failures, but are ruinous to the disposition of the pupil and through example of lack of self control on the part of

the one in authority, disadvantageous to the general interests of harmony and confidence which should exist between teacher and pupil. I must here repeat the statement that in every case of difficulty in appealing to or reaching finer qualities in a child's character, assume that that child has physical reasons for its lack of response until you have satisfied yourself, not once but repeatedly, that such causes do not exist.

Our normal schools should have and doubtless soon will have compulsory courses of study regarding physiologic development in children, as well as in school hygiene and sanitation; a course which will give a clearly defined understanding of the one and inseparable character of a child's mental, moral and physical makeup.

Be, first of all, then, fair to the child. This may sound to many of you like unjust criticism; and yet there are in many of our public schools of to-day teachers who are, unintentionally, yet, nevertheless, culpably, unfair. Every school child in the land to-day should have the right to demand a thorough understanding of its physiologic and psychologic construction. The educational career of a school youngster is at best a handicap race and to insure our much vaunted "square deal," due appreciation and allowance must be made for every physical defect and mental shortcoming. Study first of all the physical. No amount of patience and kindly interest can remove the stupidity born of a foul throat and nose obstruction, or reform the nervous, timid, panicky nature begotten of anemia and malnutrition. How can we expect a high degree of mental equipment and moral obligation on the part of a boy whose body is filthy; whose mouth is filled with decayed teeth; and the seat of whose trousers is noticeably imperfect? Certainly eminent self-respect under such conditions is an impossibility. Embarrassment, due to such circumstances, leads either on the one hand to a spirit of insolence and reckless bravado, or on the other to solitary melancholia and vice; and yet beneath all this tremendous physical handicap there may repose the essential makings of a perfect development under correct guidance plus the clearing away of physical rubbish.

Interpret first of all then the physical. This is the logical beginning and frequently the end of many of your most serious problems. By a process of what we of the medical profession are pleased to term diagnosis by exclusion, you may eliminate one after the other all of the commoner physical causes which retard school advancement. This boy, for instance, who drags in his work; learns mechanically and without interest; who listens only when spoken to directly; and then in a bored and indulgent manner. Your wildest efforts to induce him to concentrate his mind fail; you realize, perhaps, in a vague way that there is something wrong and you know that this one passively aggravating human object is causing you more worry and nerve wear than the forty-odd other pupils in your room. Now, under such conditions would it not be a great relief simply to know just what is the matter with this pupil, even assuming that you cannot entirely correct the trouble, which is by no means certain or even likely? With a few simple rules to guide you and a little study of the subject you can in ten minutes spent alone with this boy determine to

your own satisfaction whether he is a mouth breather; whether his mouth is filled with decaying teeth and putrefying food remains; whether he possesses evidence of tubercular glands; whether or not he is anemic and under-nourished; test his hearing and eyesight for long and short vision, and discover whether or not there is abuse at home or an environment that is stunting his mental and moral growth.

Once having sifted matters down to a basis where you know the physical material at hand and its defects, then your mind will become more peaceful since you are in a position to decide on a definite and intelligent course of management: a course which you know to be right and one in which you can persevere confidently and persistently if need be.

It is of course impossible within the limits of this address to even attempt discussing in detail the methods for detecting and correcting these ever present physical evils in school life. For the study of such methods I can only refer you to the special text-books. The recent publication "Civics and Health" by William H. Allen, a copy of which has been handed me by your county superintendent, is by far the best and most practical and comprehensive work, I believe, issued, and I am pleased that it is proposed by the Teachers' Association to take up the study of this book. It is filled with correct principles and common sense; void of technicalities and furnishes the detail in methods which you will require. It is a book which could be read and studied with profit, not only by every teacher but by every physician in the land. Time spent in study such as this will, I can assure you, repay you many times over in simplifying many of your most perplexing and harassing problems throughout your future work. It is a study which must, however, be undertaken seriously and thoroughly. Remember that you as teachers and we as physicians are not interested in physical reform spasms or fads. The growing public demand for such study but illustrates a deliberate awakening of the people to the value of correct hygienic management of school children. It is a general movement, based on newer scientific advancement and indicative of increasing public intelligence and education. It is destined in the very nature of things to continue in growth.

The time is almost at hand when phenomenal scholarships won at physical expense will be universally regarded as censurable and the school which permits it held culpable. State and national legislation will in the future prohibit in public institutions of learning such examples of mental achievement and bodily abuse. There can be in the light of our present knowledge no question or argument regarding the wisdom of placing the physical interest of young school children as paramount to all else. Nature makes little or no attempt to develop the brain of a child before the age of adolescence. She devotes practically all of her energy toward the nutritional. Her efforts are to provide first of all in the evolution of an individual a perfect physical machine, leaving the higher mental development as the crowning and as it should be, the final achievement.

Attempts to over stimulate brain development at this period of growth must result in a wrong diversion of physical strength, and the production of a highly excitable, unstable, neurotic mind and a permanently lowered

physical resistance. There are exceptional constitutions, so vigorous and robust as to withstand such methods. To the average child it is highly disadvantageous; to the physically delicate it is ruinous. I am not pleading for an unnecessary lowering of our educational requirements. The average curriculum in our public schools is probably nearly correct. What I desire to impress is the necessity for more systematic attention to the physical competency; a more natural and effective adjustment of the material machine to the mental requirements. We must study, in other words, to elevate the physical, if possible, to that point where it may meet the demands of the curriculum with no unnatural strain or sacrifice. Failure in this accomplishment would clearly call for a lowering of the requirements.

There are in every school many pupils who are hampered in their work and advancement through well-intentioned but mistaken ideas of discipline. Certainly we all recognize the necessity of orderly conduct in the class-room, and yet pupils should be trained to preserve such order unconsciously, if possible; a spirit of orderliness born of genuine school work interest and not through a concentration of mind control over body. Study to allow the utmost freedom of the body consistent with orderly work. This is an advantage which is, I believe, thoroughly appreciated by the majority of modern school instructors. Repeated experiences have taught them that prolonged periods of confinement to desks create a restless irritability of mind and body weariness; in reality increases the difficulties of real discipline and materially lowers the net results of a day's instruction. Short but frequent periods of complete relaxation refresh and brighten the pupil's intellect, just as an occasional amusing anecdote invigorates an audience during the delivery of an abstruse oration.

The teacher who can, at intervals, create a roomful of spontaneous laughter, is to be congratulated; since she thereby improves the physical in every child present and weaves closer bonds of confidence and affection between herself and pupils. The teacher who understands the physical: who converses frequently and freely with her pupils regarding the care and preservation of their bodies, will, in addition to the valuable instruction given, convince them of a personal interest which even the youngest will be quick to grasp and appreciate.

No parent is so intellectual, none so ignorant, as not to recognize the value of such interest and instruction. People generally are coming to know these things and, understanding them, they are quick to support such measures as relate to their lives, their homes and their happiness.

You, as public instructors, charged heretofore with, and held responsible for, the mental cultivation of your charges, are entering more and more into a new work with added responsibility.

There is, I believe, no profession which demands more the elements of patience, of self-control, of fortitude, of forbearance, self-denial and human love than yours, and be it said, to the everlasting glory of your profession and our nation, that the average public school teacher cheerfully meets these demands. To seriously take up the study of a new



department may for the time prove an added burden; but with the knowledge so acquired you will be in a position, I believe, to easily solve many heretofore perplexing problems; to find new and renewed interest in your psychologic studies of the child life surrounding you.

Through a clearer understanding of these physical riddles you will find at times the scales falling from your own eyes, and your feelings of antipathy and resentment toward many an incorrigible youngster turned to those of genuine interest and sympathy.

You will derive no inconsiderable amount of satisfaction in this department of your work, in knowing that you are instrumental in producing a generation of men and women physically, mentally and morally more perfect; that you are contributing to our nation millions of dollars in industrial values saved; that you are materially reducing the number of future pauper and prison charges, and that in thus preaching the gospel of physical perfection, through protection and preservation of the material elements within us, you are elevating mankind as a whole, and forging a new link in the chain of evidence that the good in this world is steadily gaining in ascendancy.

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## RAW AND PASTEURIZED MILK AND MILK SERUMS \*

EDWARD GUDEMAN, PH.D.

CHICAGO

Milk is perhaps the most important food article of commerce of the present day, as it has been in the past, according to the earliest records that have been deciphered. Milk is the only human foodstuff that in itself contains all the ingredients of a complete and balanced food. It is also one of the very few natural complete foodstuffs that in its original raw state is fully fit for human consumption and which is and should be consumed raw. No accurate information exists of the amount of milk that is consumed daily, the nearest figures that can be given being that about one-fourth to one-half of a quart are produced and consumed per capita per day, based on the world's population.

Milk as such is recognized and referred to in all the records of the past ages. Your time is too limited to allow any historical review, and I only recall to you the legendary story of the founding of ancient Rome, the strength and vigor of the founders being said to have been due to the milk of the she-wolf that suckled them.

If it be correct to consider the importance of a food stuff by the amount of literature we find pertaining to the product, it is shown that milk is more important than any other food product. If we judge the importance of a food by the number of investigations and analyses made thereof, this again places milk at the head of the list. I believe that I am right in stating that the number of analyses of milk and its products exceed the total number of analyses of all other food stuffs. There is

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hardly a municipality, state or government that does not give attention to milk and its products, often the dairy department being the only one that exists or is organized.

Now, what is milk? Milk is the liquid emulsion secreted from the glands of those female mammals that nourish their young. Of all the commercial varieties, that obtained from the cow is the most important and the kind most universally used. In my remarks I confine myself exclusively to cow's milk, the normal secretion from the glands of the cow, leaving out of consideration milk produced shortly before or after calving, and the effect of disease on the character of milk.

There is in my estimation no such thing as "standard milk," because every milk is its own standard. With the large amount of data at hand and the tremendous number of milk analyses, of single cows and herds of all breeds and ages, under all conceivable climatic conditions and locations, in all the four quarters of the world, we are able to state within certain narrow limits what the normal is or should be, and are justified in accepting these limits for the composition of the natural normal liquid known as milk. Notwithstanding all this information, these limits cannot and should not be fixed at any absolute unchangeable point. Even if we confine ourselves, for sake of argument, to the milk of a single cow, we find that it varies, and that its composition, its quality and quantity, will vary daily, influenced by the feeding of the cow, by the physical exercise of the cow in the periods between milking, and the daily climatic changes, changes in the seasons of the year and changes in the environment, besides many other factors, which all will materially affect the composition of the milk. This being true for a single cow, how much more true it is for a number of cows, a small or large herd. Before accepting, therefore, any figures, consideration must be given to the main influencing conditions, the breed of the cow, the feeding of same, the climatic conditions and the environment, which influence the composition of milk. The best we can do is to accept a fair average composition for a normal milk, leaving out of consideration the high and low extremes, and even such a fair general average composition for one locality may be a maximum or minimum in another locality or at a different time of the year. You will see that these points are of importance in fixing a standard for normal milk, the importance being increased as the effects of such influencing factors go beyond the product itself, the standard for average normal milk necessarily being the basis, to a greater or lesser degree, for the standard of all milk products. The fat content of milk from the Holstein cows is very low compared with the fat content of the milk from the Jersey cows, one averaging about 3 per cent. against about 6 per cent. for the other, this difference being equal to the total amount of fat found in the average milk of one breed. A study of a large number of analyses, hundreds of thousands, made throughout the world, allows the accepting of a fair general composition for average normal milk, and this in my estimation may be placed at about: fat 3 per cent., and other solids, not fat,  $8\frac{1}{4}$  per cent.

Notwithstanding the large variation in the actual composition of milk, it is very peculiar that the ratio existing between the ingredients themselves varies only within narrow limits, so that one is actually able, after making one or two determinations, to figure comparatively close as to the amounts of the other ingredients: the ash of milk approximates 8 to 9 per cent. of the solids not fat and the fat is about 35 per cent. of the total solids.

What are standards for any food products? Standards, especially in the United States, are absolutely the personal arbitrary opinion of a single individual or of a limited number of individuals grouped together, often political appointees, in whose control for the time being are the powers to promulgate rules and regulations as to the composition, manufacture and treatment of some, or all, food products, always subject to the change of opinion of the individuals or groups, due to influences exerted, commercial or political, and consequent modifications of the standards with such change of opinion or change in political administration. This accounts to a large extent why food standards, especially in the United States, are being changed continuously, and why they vary so widely in even neighboring sections. Standards, like the tariff, are often local issues. These personal arbitrary standards may or may not be endorsed by and be satisfactory to the producer, manufacturer and consumer, or any of them, and may or may not be in accordance with actual commercial customs or conditions.

A standard for normal milk is without doubt a great necessity to protect the consumer, milk being so easily adulterated by the addition of water (dilution), or the abstraction of some of the fat (skimming). The food value of milk depends on the amount of total solid matter contained in the milk. It is, therefore, only fair, and a matter of justice to the consumer, that some fundamental basis should be accepted through which it can be determined whether a proper amount of food substance or at least a minimum amount of food substance is contained in this product. Milk is a food, not a delicacy or a confection or a condiment; it is a universal food, valued exclusively for the amount of nourishment it contains. Milk is not a uniform simple liquid substance like water, but it is an emulsion of fat in a watery solution of proteid substances, mineral matter and carbohydrates, all of which have food value. If we therefore accept a fixed composition for normal milk, a minimum if you wish, certainly not a maximum, we will have a standard for normal milk, but it does not follow that this represents a standard milk. When the pure unadulterated secretion from the cow does not come up to this accepted standard, we are only justified in prohibiting its distribution, not its use, because it does not meet the arbitrary requirements in regard to quantitative food value, but we are *not* justified in calling such milk adulterated or impure or not up to standard; we simply can designate it as an abnormal product, having food value below the normal.

One of the main constituents of milk is the fat. As you all know, the fat being lighter than water, will rise to the surface. Milk on standing changes its condition, the fat coming to the top, and this top layer is

designated as "cream." It is immaterial whether this separation of the fat is due to gravity, or is more quickly and more closely accomplished by mechanical means of separation, the point being that we obtain two distinct milk products, one rich in fat—the cream—and one with a lesser amount of fat—the skim milk. It is impossible to reproduce the original emulsion after the fatty part has once separated, either partly or wholly.

We, therefore, can propose a definition for cream, as being that portion of the milk which rises to the surface on standing, or is separated from the milk by mechanical means, and which is richer in fat than the milk itself. Cream does not differ from milk, except in the change of ratio of the ingredients of the emulsion to each other, due to the concentration of the larger amount of the fat. The composition will, therefore, be influenced only by the amount of such concentration of the fat, and with the amount of highly concentrated fat substances separated from the milk; the extreme concentration being the separation of the fat in the milk as butter. Now, how much of a fat concentration and how great a fat separation is required to give cream? For illustration, let us suppose that all the fat in the milk gradually rises to the surface, the visible division line between the lower fat-free milk, and the upper fat-rich milk, known as the "cream line," being about two-thirds from the bottom. If we take milk from Holstein cows, containing an average of 3 per cent. fat, the upper half of the bulk would be the cream and would contain 6 per cent. fat, and would be identical, for all purposes, and show so by analysis, with the milk from Jersey cows, containing 6 per cent. fat. Or suppose we separate the cream by means of a separator, allowing one-fourth of the bulk of the milk to come off as cream. From the Holstein cow's milk we would get cream containing 12 per cent. fat, and from the Jersey cow's milk, cream containing 24 per cent. fat. For the same bulk of cream separated, that from the Jersey cow's milk would always contain twice as much fat as the cream from the Holstein cow's milk. Both creams would be pure, unadulterated, normal creams, but neither of them could be designated as a standard cream. This applies in all cases, the cream always varying with the amount of fat in the original milk, and the amount of cream separated from the milk. It is, therefore, irrational to accept any fixed figure as a standard for cream. I have not taken any extreme figures. The limits of fat in cream vary between any quantity larger than the amount of fat in the original normal milk from which it was separated, up to about 65 per cent. fat. A still higher fat content would give a butter separation instead of cream. If we, therefore, accept as the maximum amount of fat, in normal milk, 6 per cent., any milk that contains over 6 per cent. of fat would be correctly and legitimately designated as cream. As we cannot fix a definite standard for cream, it is impossible to fix a standard for cream products. You will note that there is a different principle involved in accepting some definite, fixed figures for a natural normal product such as milk, and from those applying to manufactured products such as cream, ice cream, etc. No two samples of cream, from the same milk, will be alike in percentage of butter fat, unless produced under identically the same conditions of time and



temperature, in the same size vessels and separated under the same conditions. Now ice cream is a manufactured product, containing among its ingredients milk or cream or both. Not being able to even fix a definite standard for milk or cream, you see the impossibility of fixing a standard for ice cream. All standards fixed for manufactured products are arbitrary and personal, often theoretical or scientific, sometimes directly based on a few special analyses, and generally not in accordance with the products that have been in markets for year—often not a question of what the product is or has been for ages, but what it should be according to the individual, personal, arbitrary conception of a single person, or of a committee or commission.

Milk is an excellent medium for the growth and culture of germs, and consequently is itself very easily changed from its original normal condition through the growth of germs. To obtain the best results from feeding of milk, ignoring exceptional cases, milk should be consumed *clean, fresh and raw*. Milk on becoming old will undergo chemical and physical changes, depending on the time, temperature and the handling which the fresh milk undergoes. The most characteristic visible change on ageing is the separation of the milk into two distinct components: first, the solids conglomerating into a mass, more or less firmly bound, often coming to the top, and secondly, the separation of the liquid watery portion, commonly designated as the whey or serum. I am not referring here to the cream or fat separation, which generally takes place more or less completely before this other separation, and is due to a difference in specific gravity of the component parts of the milk. This separation into solid and serum on ageing is due to germicidal action and carries with it radical changes in the chemical composition of the milk. Fresh, clean, raw milk on standing will become "sour." The germs or ferments that cause the "souring" producing mainly lactic acid, act very rapidly under normal conditions and the amount of acid formed is sufficient to curdle the milk, visible through this separation, into solid matter and serum. It is impossible to reproduce the original emulsion after such a separation has once taken part. In fact, it is even impossible to reproduce the original emulsion after a partial fat separation has occurred. This can be shown by the use of the ultra microscope, which will show that the "molecular" motion (Brownian movement) is not the same in milk that has stood quietly one hour compared with the same milk that has been kept in constant motion. It would carry me too far away from my specific point to go into this more in detail, although the digestibility of the milk is no doubt affected by this change in the character of the emulsion. Heating of milk has the same effect on the "molecular" motion. The effect of heating can be overcome to a great extent by the addition of colloidal substances.

The effect of "souring" of milk is known to you all, and you are familiar with the fact that a change from the normal smell, taste and looks of the milk is sufficient to inform you that that milk is not *fresh*. Sour milk is not an unwholesome article, in fact, is a very wholesome article. Buttermilk, or as it should be correctly designated, especially considering

the age we are living in, as "butter-less" milk, is really nothing but sour skimmed milk, containing a number of lactic acid germs, so great that the layman can hardly grasp the figures. I have had very few samples of buttermilk that contained less than 100,000,000 germs and many samples that contained ten times that number.

The germs that cause the souring of the milk are very easily destroyed, same as many other germs, by the application of a low heat. The single application of a low amount of heat for a short period of time is commonly designated as pasteurization. Confining my remarks, throughout this whole paper, to the *commercial* pasteurization of milk, I take the view that we have no real standard or normal for such pasteurization. It depends to the greatest extent on the fancy and taste and knowledge or lack of knowledge, of the individual who has charge of the pasteurization or who makes the rules and regulations governing it.

In the experiments to be referred to, the liquid portion, the serum, was used in one set, being injected into the animals; in the other experiments the milk itself was fed to the animals. I do not believe it is more than necessary to call attention to the fact that there is a radical difference to be expected when injecting the serum and when injecting the milk itself.

I make this explanatory statement to you gentlemen of the medical profession, as I have heard of some experiments that were made with the purpose of proving my results and conclusions wrong, in which no consideration was given to the fact that in duplicating my work changes were made both as to the substances injected and the quantities injected. Serum separations can easily be produced by treating fresh milk with chemicals, causing a coagulation of the fats and proteids, but such chemically separated serums differ from those due to germicidal action. Acetic, citric and lactic acids, rennet, metallic salts and other chemicals are commonly used for obtaining serum separations and are employed when testing milks with the refractometer, to determine the addition of water to milk, based on the optical determination of the specific gravity of the separated serums.

Germ action is strongly influenced by the treatment to which the raw milk has been subjected, before the germ action is allowed to take place. When raw untreated milk is allowed to age between the temperatures of 15 C. to 40 C. the natural germ development will be mainly of the lactic acid kind and the milk becomes "sour," showing a great increase of acidity. In milk that has been heated to about 65 C. or which is kept at a temperature of 1 C. or less, the germ development will be mainly of the putrefactive kind and the milk becomes putrid, generally without increase and in some cases with a decrease of acidity.

Lactic acid-forming germs are destroyed at a comparatively low temperature, say below 70 C. At lower temperature, say 5 C., the lactic acid germs are very inactive and at 0 C. or less are actually dormant. The germs of putrefaction are not destroyed at a temperature of 70 C. or less; some may be but not all and these germs are active and multiply at temperatures below 0 C. Experiments have shown that if raw milk is

allowed to undergo natural fermentation between 15 C. and 40 C. that the main fermentation is of the lactic acid kind and by inoculating new sterile milk with such naturally fermented milk and making repeated successive progressive inoculations, using the last inoculated milk, after same has gone into fermentation to inoculate the next portion of sterile milk, that not more than eight to ten such successive inoculations were required to produce a fermented milk, that contained only the lactic acid germs and from which pure lactic acid cultures could be separated directly. In making these tests, the milks were allowed to stand at laboratory temperatures, 15 to 25 C., for forty-eight to ninety-six hours, during which time they went into strong lactic fermentations, became "sour."

The same lot of milk was used in all of my experiments, having been divided into three parts. One portion was allowed to go into natural lactic fermentation, a second portion was pasteurized by being heated for one hour at 70 C. and the balance, the largest portion, was sterilized by being boiled for one hour, using a reflux condenser to prevent concentration. The sterilized sample was protected against outside contamination and from it the samples were drawn for one series of experiments. This sterilized milk separated into two portions on becoming old, without fermentation taking place. A second set of experiments were made using freshly sterilized milk for making the successive inoculations, it having been found that there was no difference in the results between the use of old and fresh sterilized milks. The results were found to be that the eighth to tenth generations of germs grown in old or fresh sterilized milk originally infected with germs of raw milk that had undergone natural fermentation, were of the lactic acid kind and such fermented milks containing the eighth to tenth generation of cultured germs were identical with sterile milks to which pure lactic acid cultures were added, comparing the milks as to taste, smell and microscopic appearance.

Similar tests were made with the pasteurized milk, successive inoculations being made, using a previously inoculated sample after it had stood in the laboratory forty-eight to ninety-six hours, to inoculate the subsequent sample of the freshly sterilized milk. It was found that the lactic acid germs disappeared as far as their action was concerned and that the germs of putrefaction increased very rapidly. It was found that sterile milk inoculated with the tenth to twelfth generation of germs grown in pasteurized milk was free from active lactic germs and contained only germs of putrefaction.

No cultures were made to identify any specific kind of germs, and the term "germs of putrefaction" as used by me in this paper includes all classes of germs excepting the lactic acid or acid-forming germs. These experiments with the raw and pasteurized milks were made at the same time and under the same conditions of time and temperature, using for a few experiments old sterilized milk and for the rest freshly sterilized milk, prepared specially for each set of successive inoculations. The results are therefore directly comparable, time, temperature and material being the same for each set of experiments.



Similar results have been obtained by others, showing the growth of germs of putrefaction at the expense of acid-forming germs, with milk and other food stuffs, kept for an extended period of time at temperature of about zero C.

Such results are not at all surprising, the reason for the selective growth being simply a survival of the fittest or to state it differently, a destruction of the activity of the numerically weak by the numerically strong germs. Raw milk contains an excess of lactic acid germs and these simply destroy or consume, or cause the destruction and elimination of the other kinds, and as pasteurized milk contains only a relatively few, if any, live lactic acid germs their activity is destroyed by the germs of putrefaction at low temperatures (below 5 C. or less), being dormant or very inactive, allowing the germs of putrefaction to overpower them.

Microscopic examinations showed that as the lactic acid germs increased, the other germs actually decreased and even disappeared to such an extent that they could not be identified. Against this it was found that as the germs of putrefaction increased, the number of lactic acid germs decreased only in ratio, but not in actual number and that they did not disappear, and dead lactic germs could always be identified. These results indicate that the lactic acid germs actually consume the germs of putrefaction, destroying and eliminating them, while the putrefactive germs only destroy the life or activity of the lactic acid germs, but do not consume and eliminate them. The live lactic acid germs seem to destroy the other dead germs and also those of their own class or are the indirect cause of the elimination from the fermented milk of dead germs of all classes. Whether this is due to a sort of cannibalism or due to action of lactic and other acids produced or some other cause is open to investigation.

In milk that has undergone putrefaction, a large number of dead germs are always present. The same occurs with milk that has been heated or treated with chemical preservatives, and the decomposition of these dead germs often gives rise to formation of peculiar toxic substances, similar to animal poisons, ptomains, toxins, etc.

Putrefactive fermentation of milk introduces dead matter into the milk. Lactic acid fermentation decomposes and eliminates dead matter from the milk. Pasteurizing milk prevents the lactic acid fermentation and prepares the milk for the putrefactive fermentation. Sterilization prevents both lactic and putrefactive fermentations.

That pure cultures can be obtained by progressive successive selective growths from mixed or impure cultures is well known and is practically made use of in the culture of pure yeasts, classes of yeasts being grown that will withstand chemical reactions not withstood by the original mother yeast from which they were derived. The alcoholic fermentation industries are based on the use of special selected yeasts, to give specific results and products.

Similar conclusions as to relative selective growth of germs can be drawn from the work of Herter, Welch, Vaughn, Pawlow, Metchnikoff, Hopendyl, Koch, Ehrlich and many others, especially as to the selective



action of germs in the intestines, during the processes of digestion and as the basis for prevention and in treatment of germ diseases, indicating here only the antitoxin treatment, vaccination and the use of "606."

It does not take a vivid imagination of the layman, even, to trace here connections between causes of susceptibility and immunity and the use of serums in the treatment of germ diseases, and the causes of formation of toxins and antitoxins, ptomaines and similar products and perhaps a cause of autointoxication.

A short time ago I saw the suggestion made to inoculate food with bacteria to prevent putrefaction, and while this is visionary to-day, it may be the thing of the near future, and then the food manufacturer will perhaps have a preservative acceptable to those food officials who are still averse to accept the rulings of the referee board of the United States Department of Agriculture. Personally I have long favored boiling of milk, home sterilization, and the use of buttermilk as a part of the regular home diet, although I do not believe that this will make death above the age of 100 years the rule in place of the exception.

During the last few years there has been a great deal of agitation as to how the milk supply of communities should be protected and the main bone of contention seems to have been and is still to-day, whether pasteurization, or what is called pasteurization, that is, *commercial pasteurization*, whether that is sufficient protection or not, in fact whether it is any protection at all or perhaps the opposite of health protection.

From my interpretation of the large amount of work done by many experimenters and the results of my own research and investigation work, I am firmly convinced that *commercial pasteurization, per se*, without many other very necessary safety-guards, often produces a directly dangerous milk. Old, stale, dead pasteurized milk is not fit for human nor animal consumption, in fact is more dangerous than the same milk of the same age, that has not been pasteurized. I firmly believe that it is necessary to more closely watch the distribution of pasteurized milk, than the distribution of similar raw milk. I am fully aware of the most excellent results that have been obtained in the distribution of pasteurized milk in Chicago, New York and other cities, but I am willing to go on record that these good results were not due to the pasteurization of the milk *per se*, but were mainly due, if not exclusively, to the selection of the dairies, the selection of the milk, to its method of distribution, using clean, individual containers, lots of ice, to the distributing of *fresh, clean, pasteurized milk*, all summed up in the care and attention given to its production and distribution, from cow to consumer. And I firmly believe even better results would have been obtained if this *fresh, clean* milk had not been pasteurized, if it had been distributed as *fresh, clean raw milk*.

Instead of using such good results as arguments in favor of commercial pasteurization, which it is not, as none of these results were obtained in pasteurizing as per requirements of most health authorities, these good results should be used as object lessons to compel the passage of ordinances covering sanitary requirements as to production and distribution

of milk and in every case should the sale of milk in bulk or from bulk, loose milk, be prohibited or restricted to retailing of one gallon or less.

And it should be required that milk be placed into the hands of the consumers, in quantity of one gallon or less, in the original, clean, sanitary package, just as it is done with many other food products, thereby protecting not alone the consumer but also the commodity. This ought to be originated and introduced by the manufacturer, and should be insisted on by the consumer, and no one could preach this to better advantage than you, gentlemen of the medical profession. The slogan should be clean, sanitary, small packages for fresh, clean milk.

The cost of a quart of loose milk from a bulk can as supplied in our poorer and congested districts is the same as the cost of a quart of milk delivered in a hermetically sealed glass container in our swell neighborhood. Our poorer classes pay exactly as much for a so-called quart of dirty and old milk, without the free delivery, as the rich pay for the full quart of the better product.

Pasteurized milk can become pretty old before it will show its age, even if examined in the laboratory, and it is only when it has actually become putrid and gives itself away through smell or taste that it becomes unfit as a marketable commodity.

Milk can be divided into three general classes, leaving out of consideration special milks, such as the modified and certified milks, which can belong to either of these three and which are specially prepared milk products, as to composition for the one, and method of production and distribution of the other. Modified milk should only be used on the physician's advice and modified according to his prescription.

We can divide milks into:

1. Raw milk.
2. Pasteurized milk, heated below 70 C.
3. Sterilized milk, heated to 100 C. or over.

Personally I do not believe in the middle way and take one of the extremes, either the raw milk or the sterilized milk. The main requirement is to get *clean* milk, and if you get that use it as *raw* milk. If you are not assured of having clean milk, when in doubt, then *boil* the milk, changing it from the first to the third class. I believe in this city it is just as important to boil the milk as it is to boil the water, this being specially true for the loose milk sold in bulk or from bulk and for the greater part of the *commercially* pasteurized milk found on the market.

I am not standing as lonesome and isolated on this recommendation to-day as I did some years ago. Health departments are getting into accord on the proposition of boiling milk. You will find many of your profession not adverse and many others who come very near to acceptance of the sterilization view, as compared with the pasteurization view.

Professor Bernhard Boeghild of the Royal Danish Agricultural College, Copenhagen, one of the greatest authorities on milk, its production and distribution, the one who introduced the model system of milk control in Copenhagen and other Danish cities—and this system has been very extensively followed by municipal authorities throughout the world—

during his lecturing tour in this country last year, stated while in Chicago that pasteurization in Denmark, not flash or continuous pasteurization, meant heating the milk to about 190 F. for not less than ten minutes, the official requirement being "only" 175 F. for five minutes, not sufficient. This milk then is chilled to 40 F. and kept at that temperature until distributed.

Heating to 190 F. for not less than ten minutes is somewhat closer to sterilization than the requirements of some city ordinances requiring 140 degrees for ten minutes or 165 F. for one minute, with chilling *only* down to 50 F. and no restriction as to keeping of this so-called pasteurized milk during the time of distribution. This may be commercial pasteurization, but I doubt it.

Professor Boeghild also had something to say as to getting clean milk and keeping it clean, and his clean also means clean from cow to consumer. Let me quote him as to what he said about keeping of *pasteurized* milk: "It is of great importance in using pasteurized milk not to keep the milk longer than one day. We insist (in Denmark) that pasteurized milk shall not be kept longer than twenty-four to thirty hours, only one day." This confirms absolutely what I stated and its importance justifies its repetition, that the greatest objection to pasteurized milk is that it will keep for days, seemingly fresh, not showing to the consumer how it has deteriorated; in fact it is only when it becomes actually putrid and bad smelling that it becomes an unmerchandise article of commerce. It is the absence of the living lactic germs in pasteurized milk that prevent the natural "souring," the most noticeable indication of the age of the milk. I have examined samples of pasteurized milk, bought in the open market, that contained 200,000,000 germs per c.c. and which did not indicate its age by its appearance nor by smell. If you agree with me that some germs are similar to flesh and animal matters, such a milk could not well be included in a vegetarian diet.

The milk used for the toxicity experiments was from a herd of thirty-two cows, coming from a model dairy where special attention was given to cleanliness of the cows and everything else, including the people connected with the dairy. The milk was received about twenty-four hours old and then showed a maximum germ count of 18,000 per c.c. Immediately after milking these special samples were chilled to about 2 C. and placed into sterile two-quart Mason jars, hermetically sealed with hot paraffin and kept cold. The samples were delivered to me at a temperature of about 1 to 2 C. Immediately on receipt they were thoroughly mixed and divided into four lots. These lots were designated as:

1. Raw milk.

2. Pasteurized milk. This portion was quickly heated in a water bath to 70 C. and kept at this temperature for one hour. This was then quickly cooled to laboratory temperature of about 20 C.

3. Sterilized milk. This portion was quickly heated to boiling, kept at a gentle boil for one hour, using a reflux condenser to prevent condensation.

4. Raw milk, used for analytical purposes.



The three lots used for experimental purposes were then quickly divided into smaller lots of about 150 c.c. each, approximately this amount being poured into sterile 250 c.c. Erlenmeyer flasks and immediately well corked. These smaller samples were allowed to stand in the laboratory the allotted time for each experiment, temperature ranging from 15 to 25 C. Perforated rubber stoppers were used to close the flasks, having passed through the one opening a small drying tube, filled with sterile cotton and reaching just below the rubber stopper. Through the second opening was passed a siphon tube, sealed on the outside arm, the inside shorter arm coming within half an inch of the bottom of the Erlenmeyer flask.

To draw the separated serum out of the flasks, the sealed arm of the siphon tube was clipped off, and on blowing into the top of the drying tube the siphoning of the liquid was started. A single perforated rubber stopper was placed on top of the drying tube, having a short glass tube connected to a rubber tube, closed with a pinch cock, which allowed the regulating of the speed of the siphoning.

All the serums were filtered through paper, to separate any solid substances carried over mechanically. To prevent contamination during the time of siphoning and filtration, the outside siphon arm was passed through a doubly perforated rubber stopper, the other opening being protected by a small drying tube containing sterile cotton, this stopper being placed on the test-tube into which the filtered serum ran. This test-tube was drawn out about the middle, so that it could be quickly fused together, hermetically sealing it by fusion, while it was drawn away from the rest of the apparatus. The description of the apparatus is much more complicated than the apparatus and I believe the rough outline sketch is self-explanatory.

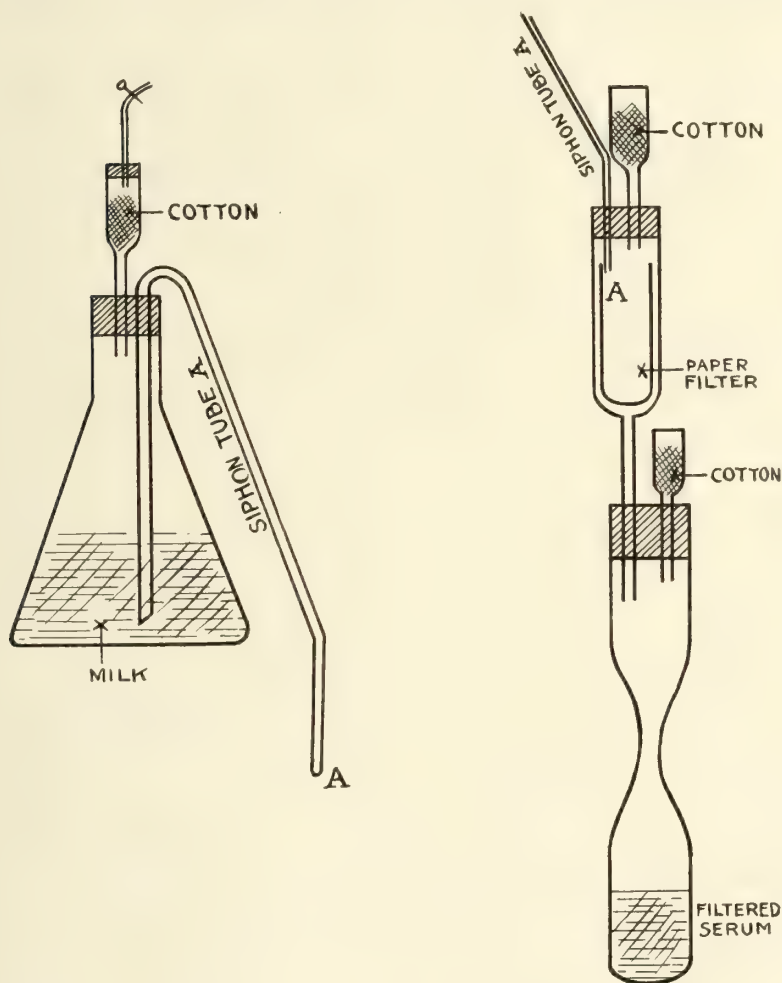
The object in using the drying tubes, sealed with sterile cotton, is to allow the entrance and escape of air and gases, without possibility of contamination of the products from outside sources. All parts of the apparatus were carefully sterilized by being heated in a hot air oven at 150 to 175 C. for not less than half an hour.

The first 10 to 15 c.c. of the filtered serum were discarded, the receiving test-tube not being attached until such quantity had been filtered. Fifteen to 25 c.c. were then caught in the test-tube which was then hermetically sealed by fusion at the collapsed point and during fusion drawn away from the rest of the apparatus.

The balance of the unfiltered serum can be forced back into the flask and on resealing the outside arm of the siphon tube can be used for other tests, of a longer period of time. Doing this produces a slight change in the mass in the flask, due to the larger part of the serum having been withdrawn, and on this account separate milk samples were used for each test. Serums from the same sample of original milk, that had stood five, eight, eleven, fourteen and seventeen days respectively, were injected in one-half c.c. amounts into guinea-pigs within two hours after filtration. The guinea-pigs remained under observation during the day. They were fed once a day, always allowing four hours to intervene between the



feeding and injection of the serum. No special attention was given to this feeding, except that the same kind of food was given to all the animals, but no account was kept of the quantity consumed. The animals were kept in separate cages, which were cleaned every morning, at which time record was made of the approximate amount and the character of the feces and urine, based on visible examination only. Accurate determinations were not required at this time, as these experiments were only



considered as preliminary to laying out a definite plan for more extensive work, and for the same reason only the general symptoms as to health of the animals was recorded, and no post-mortem examinations made.

A few experiments were made with serums separated from milk, coagulating the solids with chemicals (acetic and lactic acids, calcium chlorid and the asaprol method). In all these tests the effects of the serums from fresh, pasteurized and sterilized milks were found to be

about the same, all the animals being strongly affected. It was concluded that the effects were due to the chemicals used in obtaining the serums and not due to germ contents of the milks. This was confirmed by obtaining similar adverse results with serums separated from sterilized milks, to which had been added some of the chemicals. These experiments showed conclusively that sterilized milk acidified with acetic or lactic acids gave a different serum, from similar milk serum obtained after natural lactic acid fermentation had taken place, both samples showing the same amount of acidity. No practical differences were found using serums of freshly sterilized milks, compared with serums of sterilized milks four, seven and fourteen days old. These results showed that sterilization was complete and no contamination took place during the time of keeping the samples.

Guinea-pigs injected with serums of sterilized milks fresh, four, seven and fourteen days old, lived three days without showing any ill effects and when reinjected with serums of old raw or old pasteurized milks, reacted similarly to guinea-pigs that had received no previous injections. These experiments allowed the conclusion to be drawn, as could be anticipated, that serums from sterilized milks are sterile and do not cause germ disturbances.

The results obtained with serums from raw and pasteurized milks of same ages showed radical differences, summarized in the following experiments. One-half c.c. of serum was injected into each animal.

1. Raw milk serum, 5 days old. Guinea-pigs slightly uncomfortable for 2 to 4 hours; fully recovered inside of 24 hours.

2. Raw milk serum, 8 days old. Effects same as in Experiment 1.

3. Raw milk serum, 14 days old. Guinea-pigs more uncomfortable than in Experiments 1 and 2 for same length of time, 2 to 4 hours; bowels loose; fully recovered within 24 hours.

4. Pasteurized milk serum, 5 days old. Guinea-pigs strongly affected within 4 hours; diarrhea; death 32 to 42 hours after injection.

5. Pasteurized milk serum, 8 days old. Same symptoms as in Experiment 4. One guinea-pig died within 24 hours, the other two died within 36 hours.

6. Pasteurized milk serum, 14 days old. Same symptoms as in Experiment 5. All three guinea-pigs died within 24 hours.

7. Raw milk serum, 8 days old. Injected into guinea-pigs used in Experiment 1, being a second injection with serum of older milk. Guinea-pigs uncomfortable for 2 to 6 hours; fully recovered within 24 hours.

8. Pasteurized milk serum, 10 days old. Injected into guinea-pigs used in Experiments 1 and 7, being a third injection, two of serums of raw milks. All three guinea-pigs strongly affected; diarrhea; fully recovered within 48 hours.

9. Pasteurized milk serum, 14 days old. Injected into guinea-pigs used in Experiment 8, being a fourth injection, two of raw milk and two of pasteurized milk serums. All guinea-pigs strongly affected within 4 hours; diarrhea, with putrid feces; death within 36 hours.

10. Pasteurized milk serum, 14 days old. Injected into guinea-pigs used in Experiment 2, after giving a second injection of raw milk serum, 11 days old, the day before receiving the injection of the pasteurized milk serum 14 days old. Guinea-pigs strongly affected for 24 hours; diarrhea; fully recovered within another 48 hours.

11. Pasteurized milk serum, 17 days old. Injected into guinea-pigs that had received the previous day one injection of raw milk serum, 16 days old. Two

guinea-pigs died within 36 hours. One guinea-pig recovered within 72 hours. All strongly affected, with diarrhea and putrid feces.

12. Pasteurized milk serum 17 days old, same as used in Experiment 11. Guinea-pig died within eighteen hours; strong diarrhea; putrid feces.

13. Raw milk serum, 17 days old. Guinea-pig strongly affected; diarrhea; fully recovered within twenty-four hours.

14. Mixture of raw milk and pasteurized milk serums, 17 days old. Guinea-pigs strongly affected; diarrhea with putrid feces; death within sixty to seventy-two hours.

I believe that it is justified to draw the following conclusions from this series of experiments:

1. The serums from raw milks five to seventeen days old are not fatal to guinea-pigs, nor do they cause severe functional disturbances when injected in one-half c.c. doses.

2. The serums from pasteurized milks five to seventeen days old, when injected in one-half c.c. doses, cause severe functional disturbances and are generally fatal to guinea-pigs.

3. Guinea-pigs that have received injections of serums of raw milks seem to be immune to single injections of serums of pasteurized milk, within twenty-four hours of the first injection. The injection of serums from raw milk seems to increase the resisting power against serums from pasteurized milks, for a limited time.

Two experiments were made injecting *pasteurized* serums from raw milks, and it was found that this produced no immunity effect on the guinea-pigs to serums from pasteurized old milks. Functional disturbances were observed within one to two hours, similar to those produced by the injection of serums produced in milks through chemical agencies. This would indicate that the temporary immunity is not due to milk enzymes or milk antitoxins, but is due to the presence of active lactic acid germs.

No apparent immunity was observed using for first injections pasteurized or sterilized serums from pasteurized milk, also indicating that milk enzymes or antitoxins were not the cause of the immunity.

A few direct feeding experiments were made with two dogs, using in place of serums the milks themselves. Samples from the same lot of milk were used in all these experiments. After allowing the milk to stand the allotted predetermined time in the laboratory, 100 c.c. of the milk were mixed with 500 gm. of well-cooked meat for each feeding. The dogs were fed once a day, eating all or as much of the milk meat food as they pleased. The dogs were confined in large, roomy cages, being allowed to roam for one to two hours per day in a large yard. The dogs were kept under observation during the day. The dogs were of the same litter, female fox terriers 14 months old, of registered stock.

Dogs weighed at beginning of experiments:

Dog A = 7,400 gm.

Dog B = 7,100 gm.

Dogs were allowed to drink as much distilled water as they wanted.

1. DA. Raw milk food 7 days old fed to Dog A. No effect; feces medium soft.

2. DB. Pasteurized milk food 7 days old fed to Dog B. Vomiting one to two hours after feeding. Feces softer than from Dog A with putrid smell.

Both dogs were then fed without addition of milk for two days, being confined in their cages and kept under observation.

3. DB. Raw milk food 10 days old fed to Dog B. No effects; feces medium soft.

4. DA. Pasteurized milk food 10 days old fed to Dog A. Vomiting within one hour. Diarrhea; watery and putrid feces. Recovery within thirty-six hours. No food given on second day.

Both dogs allowed to rest for three days. Fed without milk.

5. DA. Raw milk food 14 days old fed to Dog A. No ill effects; feces soft.

6. DB. Pasteurized milk food 14 days old offered to Dog B. Refused to eat same. Allowed to starve twenty-four hours. Refused to take the food. Then fed food with raw milk 16 days old. Slight diarrhea; feces soft.

7. DA. Raw milk food 16 days old fed to Dog A. No ill effects; feces soft.

8. DAB. Dogs offered pasteurized milk food 18 days old. Both refused to eat same.

9. DAB. Dogs offered raw milk food 18 days old. Took part of same. No ill effects; feces soft.

10. DAB. Dogs fed daily for three days, one with fresh raw milk food, other fresh pasteurized milk food. No ill effects. Feces from fresh raw milk food slightly harder.

11. DAB. Dogs allowed to roam for eight days, fed twice a day without milk. Both dogs recovered weight lost during experimental period, about 300 gm. Both dogs then fed daily 500 gm. cooked meat containing pasteurized milk, 100 c.c., 5 days old. Feces became softer. Vomiting of one dog on the second day and of the other dog on the third day. Both dogs vomited on fourth day. Slight diarrhea; increased thirst. Only part of the food consumed. Both dogs refused to take the food on fifth and sixth days. Continued slight diarrhea, with soft and putrid feces. Both dogs took lots of water. No vomiting after stopping eating. Dog A. lost 1,300 gm. weight and Dog B. lost 1,100 gm. weight within seven days. Both dogs then fed cooked meat with raw milk five days old. Full recovery and return to normal weight within five days.

From these feeding experiments, I believe the following conclusions are justified:

1. Feeding dogs food containing old raw milk in strong state of lactic fermentation causes no appreciable functional disturbances.

2. Feeding dogs food containing old pasteurized milk causes strong functional disturbances, shown in loss of weight and appetite, accompanied with vomiting and diarrhea, with soft and putrid feces.

Very meager information is found in the literature as to comparative feeding experiments using raw and pasteurized milks. It seems to be indicated (?) that pigs fed on sour milk (butter-milk) are less susceptible to hog cholera than otherwise. I consider this a large and open field for investigation and experimental work, especially of the agricultural experiment stations. It is a little beyond the scope of a private laboratory, especially if such laboratory is located in a city office building.

Some very interesting results were obtained with a few children, changing the diet from pasteurized milks to raw and sterilized milks, these having been specially prepared.

1. C. Four children, aged 6 months to 2 years, suffering from diarrheal troubles, summer complaint, were given three times a day one ounce of sterilized milk, which had been inoculated with lactic cultures and then allowed to stand six days. Great improvement was noticed inside of twenty-four hours and full recovery within forty-eight hours. Examination of feces originally showed a tremen-



dous number of putrefactive germs, radically diminished after twenty-four hours and nearly absent after seventy-two hours.

2. C. Four other children aged 8 months to 2½ years suffering from diarrheal troubles, summer complaint, were given daily for two days 3½ ounces of butter-milk serums four days old. The butter-milk having been made with cultured lactic germs. Within twenty-four hours great improvement, feces harder and less putrid. Recovery after forty-eight hours and no putrid feces.

An additional dosage of 3½ ounces of butter-milk serum produced constipation.

No complete record was kept of these cases and I draw no conclusions therefrom. No doubt some of the ill effects due to the use of pasteurized milks, especially the *commercially* pasteurized milk, is not alone due to the direct action of the putrefactive germs in the milk, but is partly due to the toxic principles and the decomposition products arising from the decomposition of the dead germs themselves. I do not believe that there is much choice or difference between the decomposition products of a dead wholesome germ compared with the dead decomposition products of his very near relative, the unwholesome germ.

The lactic acid and other acid-forming germs seem to destroy and eliminate other germs, while the germs of putrefaction and non-acid-forming germs seem to destroy but do not eliminate the other germs.

I do not believe that anyone is justified to draw more than tentative conclusions from a single set or series of experiments as described to you, and I do not do so. But it seems to be very strongly indicated, to me at least, that if a milk supply is to be protected for the benefit of the public health, my results point out that real pasteurization is not sufficient, and *commercial* pasteurization, much less so. Sterilization is a much better safety-guard, home sterilization, even with its effects on the milk, change in character as to taste and possible effect on ratio of digestibility.

It certainly points out that it is fully as necessary to protect and watch pasteurized milk as raw milk, and that pasteurization, *per se*, is only protection for the benefit of manufacturers and vendors of pasteurizing machinery. *Cleanliness* is the most necessary, most essential and most efficient requirement in the production and distribution of milk, more so even for pasteurized milk than for the same aged raw milk. Milk should be watched and protected against contamination of all kinds, from cow to consumer, both inside and outside of the containers used in its distribution.

Raw milk spoiling and becoming "sour" within a short time, condemns itself and the acid-forming germs are the safety-guards, indicating to the consumer the age, that is, the actual condition of the milk. Acid-forming germs do not increase the toxicity of the milk; just the contrary.

*Pasteurized* milk, unless as *fresh* as the raw milk, can be and often is the cause of an infinite number of troubles, the absence of "souring" being a false indication of security.

Sterilized milk is a safe milk, being free from living germs and free from toxic substances due to their decomposition, although also free from the living active germs necessary for a complete and perfect digestion of the milk, under normal conditions.

*Clean raw* milk comes first; thereafter my choice is sterilized milk, fresh or canned, but if one is compelled to use commercially pasteurized milk of unknown origin and uncertain age, practice self-protection and *boil* the milk before consumption.

Commercial pasteurization is a poor makeshift, a premium offered for the distribution of old, dead, stale and often unwholesome, dirty milk. I do not care to eat dirt, filth, with or without cow's and other feces, even if same has been heated through so-called pasteurization. Pasteurization deteriorates clean milk. You can get clean milk and you can agitate for clean milk, and *clean* milk needs no pasteurization.

The ancients recognized that cleanliness was next to godliness. I believe you gentlemen more so than any one else can and should preach and bring about the recognition that *cleanliness*, *clean milk* is not "*next to*" but is *wholesomeness*.

I thank you for your kind attention.

#### DISCUSSION

A. M. Corwin:—I wish to say a word in appreciation of Dr. Gudemann's paper. I think it is good to have an outside chemist come in and try to teach us something. If his statements are true (and I believe they are) then here is something for serious consideration. What we want is clean milk. The people are entitled to clean air, clean streets, clean water, clean food and clean politics but it seems hard to get any one of them, partly due to the fact that the public is altogether too fond of sleeping. But the people occasionally wake up and when they do they usually get what they want and I believe when we get them waked up to the fact that what they want just now is clean milk, they will get it. It seems a serious question whether we are getting it now. If we are why these papers! Why all this discussion? It is just such papers as these which determine us on what we need and then help us to get it. While I believe in peace, still if to get what we should have and what the health of the people demands we have to fight, why then, I say, let us fight and in the end have peace and what we want. The Chicago Medical Society through its Milk Commission is doing much to help us get clean milk. Dairies are beginning to climb into the "band wagon" and the demand for the certified article is spreading.

That is one proposition: shall we have certified milk, which guarantees to the buyer a clean article, or shall we gloss over the surface and be willing to take any old milk, warm it up a little, kill a few germs and allow the others free road? I have here one of our city ordinances, in effect since Jan. 1, 1909. It provides, in brief, that milk, butter, cream, and ice-cream sold in this city shall be sold from cows that have passed the tuberculin test or that any milk from cows that have not had the test shall be pasteurized by the methods laid down. In other words, according to this law pasteurization while ostensibly aiming to prevent contagion from germs of typhoid, scarlet fever, diphtheria and the like, should be begun on any milk but not on tuberculin-tested cow's milk, as if the tuberculin test was sufficient to guarantee not only against tuberculosis but all other pathogenic germs.

Where is the logic of that? Pasteurization does not kill the tubercle bacillus. Tubercle bacilli must undergo a high grade of heat for some twenty minutes, and the present requirements of pasteurization are that it shall be heated at a temperature of 140 to 150 F.

It seems to me that this ordinance is not all it should be and it seems to me that this question should be open to a good deal of careful, unbiased unprejudiced investigation before we come to a conclusion. From what I have heard and read I am inclined to believe that pasteurization is not all we want and that the

Health Department instead of throwing cold water on our Milk Commission should back it up and lend it every possible aid.

Frederick A. Leusman:—The pure milk question to my mind is one of the most supreme importance in the whole domain of nutrition and dietetics. A recognition of this fact made it a matter of interest to me to follow up to a limited extent this topic in current medical literature. From what little knowledge a man may gain that way it gives me much pleasure to second the remarks made by the gentleman who has given us such an excellent paper, investigation and analysis with reference to milk and its distribution to-night. It seems to be agreed on that we must get the milk from healthy cows clean from the udder after clean collection and proper cooling as rapidly to the consumer as possible in individual containers. If the milk is lacking in freedom from excess of microbial content, then let the consumer boil it. Commercial pasteurization has many scientific enemies.

The medical profession in consensus and no one single man will have to settle the milk question definitely.

Oliver Tydings:—As to the use of tuberculin: I have used it for many years; since 1891. I have had some beautiful results. Using it early in life and early in the history of the preparation I used it many times where I would not use it to-day, and yet from a clinical standpoint I think if I had tuberculosis with a high run of temperature I would use tuberculin if for nothing more than to control the temperature.

There is one thing which has occurred to me twice in the use of tuberculin that I have never seen in any of the literature of the subject or heard mentioned. I thought on two occasions I had impending dissolution. At that time I was using P. D. & Co.'s Tuberculin R. It looked to me as though dissolution would take place in a few seconds. Both of the patients recovered, but the heart action at the time became very alarming and I must confess that since that time I have never felt easy when using it. In both of those cases I had left the tuberculin with the patient to be administered by some member of the family. When the first one reported a result of this kind I thought it was fright, but afterwards I got the same result myself when giving it and did not use it again in that case. Both of the patients died shortly afterward; that is, after a few months.

James E. Stubbs:—When doctors disagree then there is usually some of truth on both sides. There has been a great deal of talk about this question of milk, both pro and con. A great many boards of health think they know more than God. They have been banging away at this one thing for years, sometimes wanting to kill about half the cows in the United States and sometimes wanting to kill about half of the good properties in natural milk. They can see in a can of milk tubercular germs enough to kill the whole of humanity. Then as a remedy they suggest pasteurization which does not kill all of the germs and is really a detriment to the milk!

Healthy milk, kept clean, is one of the very best foods we have. The fact that bovine tuberculosis only affects children over 8 months and under eight years old does not prove much. How do we know but that the germs were latent in the child from birth and incubated in his system, that it is not bovine tuberculosis, but hereditary tuberculosis?

As Dr. Lackner has said, children of one year and over playing with other children convey it. The germ is in the living human being, moving about and scattering the infection. I do not believe there is any tuberculosis carried about by the sputum on the streets. The Health Department says there are chronic carriers spreading the disease. Call it what you please, the person who has tuberculosis and is traveling around is spreading that disease the same as they would spread scarlet fever or measles. I believe that all cases of tubercular infections are communicated from one human being to another, not by sputum, but by merely coming in contact with them. That is my strong belief; I have not come to it suddenly nor by any abstract theory (we are getting lame and limping from carrying about so many theories) but by demonstrable facts obtained by scrutiny and careful, thorough observation.



## A SANITARY MILK SUPPLY FOR CITIES FROM A MEDICAL STANDPOINT

ROBERT A. BLACK, M.D.

Member Chicago Milk Commission

To the layman the medical profession may seem idealistic, demanding things that are not practical, yet we are on the firing line and certainly see the damage resulting, and can usually figure up the ultimate cost of carelessness. We have seen wonderful results in the saving of life by the use of antiseptics, still greater result from the use of asepsis, and although to us the time, labor and expense have been great, we have met the difficulty. In the demands we make on the dairyman we feel that we are not asking more than we have already done.

That there will be an increase in the cost of milk we know. We also know that there can be an increase in the cost of almost any other commodity, without serious remonstrance, yet there are loud, wild outcries of Trust the moment a progressive dairyman declares that his production of pure, clean milk means an increase in cost of one or two cents per quart. If, however, the consumer were told plainly that cheaper milk means disease germs and dirt, I do not think there would be any complaint about the increased cost, which should be cheerfully borne by the consumer.

From a medical standpoint we ask: (1) that there be clean milk with an absence of large numbers of germs and entire freedom from pathologic germs; (2) a constant nutritive value of known chemical composition with a uniform relation between the fats, sugars and albumins; (3) an unvarying resistance to early fermentative changes, so that it may be kept without extraordinary care.

In our first requirement I say absence of large numbers of bacteria, because aseptic milk is practically impossible and would add a needless expense to the dairyman. Also it would appear from experiments that certain germs are comparatively harmless in small numbers and may be even beneficial.

According to Heinemann's experiments, the most common germ is the *Streptococcus lacticus*, and while (from their method of growing) these germs are indistinguishable from streptococci that produce disease, they have to be passed through several animals before they will produce disease in the human body. This germ is largely concerned in the production of lactic acid.

Seiffert further contends that this germ with some of the staphylococci group and some of the colon bacilli group is responsible for lactic acid which prevents a neutral or alkaline reaction taking place, which is so essential for the growth of many disease-producing germs.

That it is practical can be shown by a summary of our city certified milk which I have taken from four farms. These samples were all taken on delivery to the consumer when the milk was twenty-four to thirty-six hours old.

Farm 1 showed in fifty-one samples with average of 5,612 germs in each 15 drops.

Farm 2 showed in sixty samples with average of 4,078 germs in each 15 drops.

Farm 3 showed in forty-three samples with average of 6,502 germs in each 15 drops.

Farm 4 showed in seventeen samples with average of 2,553 germs in each 15 drops.

A total of 171 consecutive examinations with an average 4,686 germs in each 15 drops. It might be interesting to add that one of these farms, and not the one producing the highest count, was equipped for producing this clean milk at an expenditure of \$1,600.

That milk should be entirely free from disease-producing germs is shown conclusively by a summary of epidemics prepared by Busey and Kober of which I only cite a few to show the most intense need of this requirement.

A typhoid epidemic in Clifton, England, showed 244 cases of which 230 came from one dairy.

A scarlet fever epidemic in Boston in 1907 produced 227 cases; of these 195 came from the same dairy and occurred in four days' time.



A diphtheria epidemic occurred in Ashtabula of 111 cases with 23 deaths; 100 cases came from families that used milk from one dairy.

Hart has collected a series of milk-borne diphtheria epidemic which total 1,051 cases with 210 deaths. Surely with a life toll of this character there should be no hesitancy in demanding no disease-producing germ if any expense can avoid it.

Statistics on tubercular infections directly transmitted are harder to find, yet we can be on the safe side by taking the conclusions of several able workers who have recently gathered proof.

Anderson in 223 samples of milk showed that 6.72 per cent. of the samples contained tubercular germs virulent to guinea-pigs.

Trosh examined 7,097 samples of market milk and found tubercular germs in 594.

Schroeder says, whatever chances we ourselves may take as adults, we have no right to neglect our duty to children. When we examine the reports of a host of investigators, we find though there may be two morphologically distinct types of the tubercula bacillus, that they are connected by transition forms, and if the two commoner types (human and bovine, but neither restricted to man or cattle) really differ in an important way it is that the type commoner in cattle is of much higher disease-producing virulence than that common to man."

Dr. Parks, with 20 cases of general tubercular infection found the human type of bacilli was causative in fourteen cases and the bovine type in six. In one case of abdominal tuberculosis of bovine type he was able to obtain milk from the farm which supplied the child's milk, and both samples showed tubercular bacilli which produced fatal tuberculosis in guinea-pigs.

Besides these twenty cases he reports 35 surgical cases of tuberculosis of which twenty-nine were swollen glands. Twenty of these were due to the human type, while nine were of bovine origin.

These figures certainly show why milk should be produced only from tuberculin tested cows, and the more so since Salmon, after a careful study of all facts in regard to the tuberculin reaction on cattle, says, "It is an accurate method of determining whether the animal has tuberculosis; that by its use the diseased animal is detected and removed from the herd, thereby protecting other cattle; that tuberculin has no ill effect on the healthy animal."

Already we see the progressive dairyman taking advantage of this test. Let us help him along by demanding it for all our milk cows.

That milk must have a constant nutritive value and definite chemical composition is already recognized by law, for protecting the consumer from fraud and dangerous dilutants and preservatives, and also for the use of infants. Without a definite standard it would be impossible to correctly modify milk.

The Certified Milk Commission has adopted a standard of 3.5 per cent. proteids; 3.5 to 4.5 per cent. fats, and 4 per cent. sugar. Should milk for drinking purposes show a higher per cent. fat than this, it should be so labeled, or enough milk of lower composition should be introduced to bring the food value down.

To obtain the ideal milk for infant feeding, we should take one step further and demand that the dairyman use cows which produce a small size fat globule in their milk.

Our third requirement, an unvarying resistance to early fermentative changes, demands as little handling as possible; Rosenau experimentally shows that clumping or clustering is one of the factors that cause an apparent decrease in the number of germs. Milk that is shaken or stirred vigorously shows more germs growing on culture media. The next reason for fewer handlings is that each handling only adds another source of infection.

Milk should be subjected to a steady cool temperature, apparently best around 40 Fahrenheit. Rosenau found that freezing milk for ten minutes had no effect on the germ-destroying power, that freezing for 24 hours before inoculating with bacillus typhosus had no influence on its restraining power as far as the bacillus was concerned, but apparently lessens this power for the bacillus forming lactic

acid. Yet freezing does produce changes in milk, for each winter we see cases of food poisoning in infants which can be attributed to thawed frozen milk, hence, doctors usually warn mothers against permitting babies to have such milk.

That it should not be allowed to stay at a temperature much higher is shown by Freudenreich, who subjected a sample of milk containing 153,000 germs to the cubic inch to a temperature of 59° Fahrenheit, and one hour later found it to contain 539,750 germs, and at the end of twenty-five hours to contain 85,000,000 germs. The effects on milk of higher degrees of heat sufficient to kill bacteria (which is conceded to be with very few exceptions around 140° to 165° Fahrenheit) is still the subject of much controversy. It is generally agreed that milk has a germicidal action, and that this action is present only in raw milk, and continues according to Heinemann for eight to ten hours. Boiling or heating to about 80° Centigrade destroys this action, lesser degrees of heat vary with the micro-organism to be destroyed.

The effects of heat, 140° to 165° Fahrenheit, on the various ferments is also a subject of controversy, and the bulk of the evidence seems to be that pasteurization done in scientific laboratories and by ultra scientific men is not in the least injurious, yet in my opinion commercial pasteurization of a dirty milk supply is to be condemned as is the dirty milk supply. Mildly stating it, it is far from the ideal method and I think is positively harmful in the manner in which it is now commercially carried on. With the amount of advertising that pasteurized milk has received, expended on demanding clean milk we certainly would be closer to our goal, which is, clean, pure milk.

Many times do I hear, when baby is taken ill with enteritis, and the milk is investigated, the mother reply, "Oh, it cannot be from the milk because the label says, pasteurized." Such is the false sense of security which is now developed that the mother is often absolutely careless as to feeding pure milk to the babe. And it is only too late when she realizes the real import of commercially pasteurized milk. Why have we not taught her in the beginning to demand pure milk?

Having a desire to see the condition of this pasteurized milk when it reached the babe, I had my assistant, Dr. W. P. Curtis, collect samples. These samples were taken directly from the baby's bottle, with the exception of three taken from a hospital, and taken during the past month when the weather has been ideal to keep down germ growth. You can imagine what they might be during the warm summer months.

For a three low count we found 3,440—7,140—22,540.

For a three high count 2,580,330—426,520—864,640. Such a varying of counts certainly fails to impress us with the efficiency of commercial pasteurization.

They show one infection with a germ growing a green colony which certainly is foreign to the germs found in milk and often causes the green bowel movement so common in summertime. We are led to assume that if commercial pasteurization does one thing, it diminishes the growth of the streptococci lactis, which is so often a protection to milk. The greater number of these are killed, although it has been recently shown that a few strains of strepto will stand as high as 170° which accounts for the eventual souring of this milk.

Stoakley says that sour milk is rarely the cause of ptomaine poisoning, and from our experience with infants, we have found it to be a life saving food under some conditions. How often souring is delayed by incomplete pasteurization, so that the mother tasting the milk finds it sweet and gives her babe the most violent of poisons, which according to Vaughan, may be due to tyrotoxin or a similar compound and according to Novy to toxins set free by poisoning peptonizing bacteria which he proved to be capable of producing death in guinea-pigs and puppies by diarrhea in four or five days.

The manager of one of our larger pasteurizing plants gave the following description of their method:

"Our milk is first run through the separator to remove any sediment. Imagine what the sediment of milk may be; imagine our permitting any sediment of

manure, dead flies and hair in any other articles of food. Does this straining out of sediment and pasteurizing not tend to make the dairyman careless?"

Then, when the milk enters the pasteurizer it has a temperature of about 60°. Just the temperature that Freudenreich showed to produce 85,000,000; then heated to a temperature of 165° for one and one-half minutes or two minutes, then run through a water cooler at fifty. Rogers has recently shown that a temperature of 185° is the lowest at which this flash pasteurizing can be effective, yet, I know from talking to various dairymen that they consider 165° sufficient. Of course, they have to, for a higher temperature would destroy their cream line and make their milk a disgraced dirty milk and place it where it really belongs.

Does that sound like a method warranting us physicians in recommending pasteurized milk, or does it not sound more like a commercial way of keeping milk sweet till it can have a chance to kill some babe?

Dr. Freeman of New York, after a careful study of milk from a medical standpoint, concludes that while milk is in no way changed by pasteurization for 40 minutes at 140°, yet commercial pasteurization is to be condemned.

Dr. Evans of Philadelphia, in an examination of five large pasteurizing plants during the month of May found two plants using the flash method of pasteurizing averaged about 750,000 and the three using the Holding method averaged about 575,000 germs.

This certainly leaves a most dangerous milk when we consider how from various experiments it has been shown that the lactic acid germ is one of the easier killed although a few hardy strains remain.

Dr. Koller's work at Rochester certainly speaks for itself, and if I have his figures right, they certainly show a reduction in infant mortality far in excess of any figures yet shown by commercial pasteurization of a dirty milk, so that instead of contending and temporizing with improper pasteurization, or pasteurization of improperly procured milk, or improper care of pasteurized milk, let us demand and work for pure, clean milk.

Work with the dairyman to have him produce it, work with the general public to keep it so after receiving it, and last, but not least, occasionally remind our own profession of the important place they have in this battle.

#### DISCUSSION

Robert A. Black: I would like to add my voice of praise to Dr. Gudeman's paper. Some three months ago I carefully analyzed about fifteen specimens of commercially pasteurized milk, taken at random from the ordinary milk distributed at people's doors. The least number of bacteria in any sample was 3,440 and the largest 2,580,000, the others ranging all the way between these figures, but in none were there less than 20,000 except in the one specimen above mentioned which contained 3,440.

Since that time I have followed Dr. Gudeman's advice and ordered all milk, when commercially pasteurized, boiled. One thing which has been noted from clinical experience which has not yet been mentioned is that when children fed on pasteurized milk become ill they respond far more slowly to medication than do children fed on raw milk. This is a point not to be overlooked in the question of infant feeding.

Edward Gudeman (closing the discussion): There are a few remarks which I should like to make. In the first place I wish to state that my views on pasteurization have been mentioned before Dr. Evans ever became Health Commissioner. It is not that I disagree with him personally, but with the general view which not only he, but many others hold.

It was also stated that the health department was not in harmony with the idea of certified milk (clean milk). This may have been the case but is not in "harmony" with their present view, if I correctly interpret their last Health Bulletin of Jan. 14, 1911, which I quote in part as follows: "Suggestions for proper, efficient, safe, reliable pasteurization."



"1. That the dairy farm, barn, milk house, yard, etc., is in proper sanitary condition and properly equipped.

"2. Be sure that the milk you treat comes from healthy, tuberculin tested, non-reacting cows.

"3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13. All referring to cleanliness and care in handling of the milk and its distribution.

"14. Always repasteurize at once, milk of which you have any doubt as to whether it has been treated at the proper temperature or for the proper time.

"15, 16 and 17, also refer to tests for cleanliness and proper pasteurization."

As these recommendations are identical with the recommendations and requirements for certification of milk according to your Society, I cannot conceive how the Health Department can be adverse to certified milk, in fact must now be in favor of it. The only difficulty as to certified milk at present is its scarcity. If the Health Department would use, say, \$100,000 of its appropriation to distribute certified milk in our poorer districts during the summer months, distribute it free or at a nominal price, I believe that the infant mortality would be materially reduced.

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## HEREDITY IN CANCER \*

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In speaking of the heredity in syphilis and tuberculosis we call on the *Spirochaeta pallida* and *Bacillus tuberculosis* to guide us. In order that we may be guided by a parasite we will assume that cancer (carcinoma and sarcoma) is an infectious disease and will first give reasons for ascribing a parasite nature to these malignant tumors, before taking up the subject of heredity.

### SELECTIVE ACTION OF PARASITES; CELLULAR SUSCEPTIBILITY.

No one questions the selective action of certain bacteria for certain cells. The pneumococcus usually affects the lung. The gonococcus the urethra. The meningococcus the meninges. The diphtheria bacillus, the tonsils and upper air passages, etc. These different organisms seem to have an elective affinity for the respective tissues. In certain hematogenous infections the selective action is shown in a marked degree. The organism that causes acute articular rheumatism usually gains entrance through the tonsils and once in the circulating blood has all tissues and organs at its disposal. Yet the organism remains more or less indifferent to all tissues till it strikes the synovial membranes of the larger joints of the extremities or later attacks the endocardium, and with a degree of fineness selects the mitral valve. The plasmodium malariae can reach one and all tissue cells of the body but its action is limited to one specific type of tissue cell, the red blood corpuscle. The tubercle bacillus can reach and can affect any tissue or organ in the body. Yet it is wonderful how it spares so many, and as the rule only affects certain few as the lung, lymph glands, bone. Does cancer not behave in a similar manner? Does cancer not manifest selective action?

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\* Read in a Symposium on Heredity before the Chicago Medical Society, May 4, 1910.



The uterus, the skin, the breast and the stomach are organs that mark the frequent seat of carcinomatous development. The fascia, subcutaneous and osseous tissues furnish especially favorable soil for sarcomatous proliferation. Are these the organs and tissues sprinkled with misplaced embryonal matrices? Are these the organs and tissues that suffer anatomic and physiologic dislocations from loss of tension? Reasoning from analogy it would be justifiable to hold that these are the organs and tissues least resistant to a parasite, that these are the organs and tissues which offer environment favorable for cancer development, that these are the organs and tissues most susceptible to this particular infection. And note, it is not only the natural degree of cellular susceptibility or microbic electivity that gives us the topography of cancer for there are certain predisposing causes which undoubtedly exert a profound influence in precipitating the disease. These predisposing causes render the normal resistant cell susceptible to infection. They create what the Latins term a *Locus minoris resistentiae*. They prepare the soil for the reception and growth of cancer.

PREDISPOSING CAUSES: CAUSES WHICH RENDER CELLS SUSCEPTIBLE  
TO INFECTION.

*Age.*—Cancer visits the embryo in utero, makes its rounds to the cradles of infants, frequents youth and the middle aged and man already burdened with years carries it with him to his last resting place. No age therefore is exempt from cancer, either carcinoma or sarcoma.

It appears that age determines more or less on what kind of tissue the parasite is to act. There is no doubt that in different periods of life alterations in the various tissue cells take place. We all know that it is uncommon to meet with cases of osteomyelitis in adults while the disease is frequent in the young. It thus seems that youth renders cells of connective tissue more susceptible to infection, while the epithelial and endothelial cells are more antagonistic to the invasion of the microbe of cancer; hence sarcoma predominates at this age. Senility, on the other hand, pulls down the flag of sarcoma and hoists carcinoma as the banner of malignancy.

Age seems to play another important role; juvenile tissue, although antagonistic to carcinoma, allows it to pursue an unusually malignant course when it does occur and offers little resistance to the growing tumor cells. The senile state, on the other hand, favors the impregnation of epithelial (and endothelial cells<sup>1</sup>) which leads to development of carcinoma but exercises at the same time an inhibitory influence on cancer growth.

*Trauma.*—It is a well known fact that trauma frequently precipitates inflammatory processes. Yet no amount of trauma can produce inflammation unless the injured tissues become infected with the microbes of inflammation. It is also a well known fact that trauma frequently precipitates cancerous processes; yet the disease frequently originates where there is no evidence of previous injuries, and here again it is only natural to infer that cancer can only develop where the essential cause is present,

1. Tumors springing from these cells are classed with sarcomas by most authorities.

the specific microbe of cancer. The influence of trauma is more pronounced in the etiology of sarcoma than in that of carcinoma. Sarcoma not infrequently develops at the seat of fractures. The periosteum, the lymph glands, sexual glands and mammae are most frequently affected by sarcoma.

*Irritations.*—Irritations, both immediate and prolonged, frequently result in the formation of an infection atrium. Cuts, punctures, abrasions often open the door to infection. Cancer not infrequently starts in chronic inflammatory products as tuberculosis. The chronic inflammation set up by gall stones, gastric ulcer, ulcer crusis, not infrequently have cancer engrafted upon them. Cancer of the tongue can frequently be attributed to irritation of bad teeth. Psoriasis and ichthyosis at times also till the soil for cancer. Cancer of the uterus is frequently initiated by tears, erosion and chronic endometritis with irritating discharges; cancer of the lip, by the tobacco pipe. Chronic eczema of the nipple frequently leads to cancer development; cancer of the breasts can in cases be attributed to previous mastitis. Warts, pigmented moles and burns not infrequently mark the sight of cancer growth. X-ray exposures also increase cellular susceptibility to cancer infection.

*Metaplasia.*—To the conversion of one cancer cell type into another the term *metaplasia* has been applied. To believe that a connective tissue cell or sarcoma cell can metamorphose into a carcinoma cell is to believe that a connective tissue cell can produce an epithelial cell. Would it not make a chaos of all our cellular pathology? Granting the existence of a parasite this train of pathologic conditions could represent expressions of parasitic activity. The parasite invading the cell nucleus incites it to abnormal proliferation. The germs living in symbiosis with the cell are carried over during the process of division, so that each daughter cell is charged with the infective agent. And as the descendents of the abnormal proliferating cells retain the morphologic and biologic peculiarities of their parentage, a tumor must result whose component cancer cells bear the image of its prototype. It must then necessarily follow that a squamous cell can only give birth to a squamous cell carcinoma; a cylindrical cell can only give birth to a cylindrical carcinoma, and a connective tissue cell can only produce a sarcoma when infected with the specific micro-organism, and that these different cancers, as well as all intermediate types, can only procreate their kind.

It is true that in spontaneous cancer both in man and animal one finds different histologic pictures side by side. In experimental tumors we find them side by side as well as isolated, and we can watch a carcinoma cell type lose itself and disappear in a developing sarcoma, and vice versa. What theory other than the parasitic could offer a better explanation of this cell variation and still harmonize so well with the other manifestations of cancerous disease. A bacteriologic translation of this phenomenon could be had in that more than one cell type is infected by the parasite and the cell which has the advantage over another cell type is going to destroy the weaker—in the *struggle for existence*.

The phenomenon of *metaplasia* is undoubtedly often overlooked in cases where closely related cell types become infected. It might be interesting to cite a few cases of *metaplasie*:

1. A case of Paget's disease, a squamous cell carcinoma, which came under my observation, was operated on; the resistive tumor was a cylindrical cell carcinoma.

2. A case of Dr. Edward H. Ochsner, from which I made sections at the time of operation, showed a typical spindle cell sarcoma and sections at autopsy six months later, typical glandular carcinoma.

3. Schnorl cites a case where after an extirpation of a carcinoma of the thyroid, the resistive tumor showed a transformation into sarcoma with sarcoma metastasis.

4. A case of carcinoma of the prostate is reported where among the metastatic tumors there was found an osteo-chondro-sarcoma.

5. Hart reports a carcinoma ventriculi with metastatic tumor of the esophagus producing a squamous cell carcinoma, etc. The same striking phenomenon has been noted in animal experimentation:

1. Levin injected a carcinoma of human ovary into a dog and obtained a sarcoma which he carried twelve generations.

2. Daynet and Mauclair injected rectal carcinoma into the peritoneal cavity of a rat and there developed what the author termed a sarco-carcinoma. Another experimenter transplanted a spindle cell sarcoma into a rat and found a mixture of carcinoma and sarcoma in the second generation. Viewing these facts one can see how metaplasie would strongly support the parasitic theory.

The epidemic outbreak of cancer in cattle adds probability to the infectious theory. The spontaneous development of cancer in healthy mice living together with cancerous mice as reported by Gaylord, Clowes, Bashford and others, also that healthy mice contract the disease when put in cages which cancerous mice once occupied is most suggestive of the infective character of cancer. Morau reports an outbreak of cancer in mice which he brought about by transferring bed-bugs from cages inhabited by cancerous mice to cages housing healthy mice. Pick has shown that cancer occurs as endemic in brook-trout hatcheries. Gaylord's interesting work with fish goes to show the infectiousness of cancer. In this connection I might state that cancer is said to be most prevalent along river sources and in localities subjected to floods.

The epidemic and endemic outbreak of cancer in the human family also speaks for the infectiousness of cancer. In certain localities the disease prevails more than in others. Certain houses have furnished cancer for many decades and not a few members of families who have lived in them have succumbed to the disease. These houses can certainly be looked upon as infected dwellings.

It is known that a patient has given the disease to the laundress, that wives have infected husbands; many surgeons have died of cancer. It is interesting to note that individuals who contract the disease seldom develop the same type of cancer with which the patient was afflicted. This would speak for infection and not cancer cell transplantation. It



would tend to show that the cancer cell is non-essential in starting new cancer growths. The fact that the successful inoculations of human cancer in lower animals do not always produce the type of cancer which is injected would confirm the above. An animal that is infected has its own tissue undergo a cancerous change. While an animal that has cancer cells engrafted upon it simply feeds the transplanted cancer cell and they continue to grow in this animal. Its tissue cells remain free from malignant degeneration as long as they can free themselves of infection.

*Auto-Inoculability.*—The evidence of cell implantation has something in common with the behavior of parasites.

1. Cancer growing in the track of the trochar after aspiration of pleuritic fluid from endothelioma of the pleura or cancer ascites.

2. The occurrence of cancer in the stitch-tract following an operation for cancer.

3. Cases are reported of cancer of the stomach from swallowed cancer material of the esophagus.

4. Cancer of the lung from aspirated cancer material of the trachea.

The evidence of so-called **contact infection** as seen in cancer of the lip, larynx, and vulva. The occurrence of multiple primary carcinoma as occasionally seen in xeroderma pigmentosa and senile keratosis would suggest infection.

#### HISTOLOGICAL RESEMBLANCE TO OTHER INFECTIOUS DISEASES.

In human pathology we meet with many cases where we are unable microscopically to differentiate malignancy from chronic inflammation. A round cell sarcoma can bear such a strong resemblance to granulation tissue that it is difficult, if not impossible, to distinguish it without the clinical history.

1. A tuberculous infection can so stimulate a sarcoma that even with the aid of the microscope and clinical history mistakes are made.

2. Syphilitic tumors can also simulate sarcoma very closely, histologically, so that Hanseman remarks that often only the minutest details of all clinical and biological factors can clear up the diagnosis.

3. In leukemia and pseudo-leukemia we see hyperplasia of lymph structures, which undoubtedly are brought about by some germ and not infrequently do we find that as the disease progresses the cells become malignant. This striking similarity to these infectious diseases would again suggest the infective origin of cancer. Often the injection of human cancer in animals results in the development of so-called **granulomata**. This phenomenon should not be slighted, as we know, for example, that typhoid, diphtheria and many other viri when injected into lower animals, never produce the same pathologic pictures we see in man. It might well be that many of the chronic inflammatory processes which we are in the habit of regarding as predisposing causes are nothing less than cancer in themselves.

Ehrlich's work on immunity of cancer tends to show that the active immunity of mice to tumors is a panimmunity rather than a specific



immunity for any particular type of cancer, which is presumptive evidence of the parasitic nature of the disease. The immunity obtained by blood injections and transfusions, as reported by Bashford and Crile, respectively, the reaction of certain serums, the tendency to hemolysis, and again taking into consideration the rapid and peculiar growth of cancer, the leukocytic infiltration which usually accompanies it, the production of metastasis, the same chronic poisoning, the cachexia, that the many different kinds of cancer bring about with the destruction of the general health, all coordinate beautifully with known parasitic manifestations. With this overwhelming evidence of infectivity we are justified in assuming the parasitic origin of cancer and are now in a position to discuss the subject of heredity.

#### HEREDITY.

While the hereditary aptitude for carcinoma is recognized by most authorities, the hereditary predisposition to sarcoma is questioned. There is so much suggestive evidence that carcinoma and sarcoma are simply different expressions of a single disease, that is to say, have one and the same causative agent, that it appears justifiable to assume this position. It would establish the connecting link of these two groups of tumors which would give weight and strength to the parasitic theory. Text-books deal with carcinoma and sarcoma separately. Our schools teach us to regard carcinoma and sarcoma as different diseases, but wherein lies the difference. Virchow separated these two tumors simply on a histologic basis. All cancerous tumors, whether carcinoma or sarcoma, manifest the same clinical tendencies and it is their like behavior that suggests their common etiology. Statistics as to the heredity of cancer consequently must fall short. Granting that a common parasite underlies carcinoma and sarcoma and knowing that carcinoma is the disease of the parent and sarcoma the disease of youth, the heredity for cancer must play the same rôle as does the heredity for tuberculosis. It is generally recognized that tuberculous parents give rise in the offspring to an hereditary predisposition to tuberculous infections. Children born to tuberculous parents are more susceptible and coming more in contact with the tubercle bacilli are more liable to acquire the disease. So it is reasonable to infer that cancer in the parent gives rise in the offspring to an hereditary predisposition to cancer infection and being surrounded by the germs of cancer are more liable to acquire the disease. In certain families the heredity of cancer has been shown in a marked manner. Cases have been reported where many members of a family died of cancer, and most interesting instances of carcinoma running through families in several successive generations. Broca relates an instance of hereditary predisposition to carcinoma in which a lady, four of her daughters and eleven of her grandchildren died of carcinoma. Very frequently carcinoma is not only seen in the parent and offspring, but also occupies the same localities. Napoleon died of carcinoma of the stomach, as did his father, brother and two of his sisters. Tuberculosis more or less dupli-

ates this phenomenon. We find that tuberculosis appears as phthisis in one family and as glandular tuberculosis in another.

The result obtained in experimental breeding also indicates the heredity of cancer. Dr. Tyzzer tells us of a female mouse with a large cancerous growth, which he mated with a normal healthy mouse. In a short time this couple had a hundred descendants, of which sixty-five survived to mature age and twenty developed cancerous tumors, of which they ultimately died. One out of every three, in other words, fell victims to the disease. It does not necessarily follow that the cancer parasite was directly transmitted from mother to offspring as a post-conceptional intra-uterine infection for we know that tuberculous children of tuberculous parents acquire not the disease as a rule, but inherit a constitution especially adapted to it; and so many of the descendants of cancerous parents are furnished with a specific culture media that favors development of these tumors.

No race is exempt from cancer. The parasite reigns supreme. Its power is felt over the surface of the globe. It kills annually tens of thousands in the United States alone. It not only attacks man but many of the lower animals. Certain races are more susceptible than others. The Indian is said to be singularly immune. It is reasonable to suppose from analogy to other infectious diseases, that a natural immunity to cancer infection exists and that freedom from infection is often the result of hereditary influence. Autopsies show that nearly all of us have had tuberculosis, are having tuberculosis, and will have tuberculosis and that our cells are fighting the disease every day. We know that many of the bacilli carriers or those who are surrounded by tubercle bacilli have thousands of microscopical tubercular lesions during a lifetime, that make their appearance and vanish again, leaving no trace *in situ* or record of same in the gray cells of the patient. And so it is only natural to infer that you and I have had cancer, are having cancer, and will have cancer and if people keep on dying with cancer. I am safe in saying, will have had cancer.

There is so much in common between cancer and certain diseases whose microbic origin has been well established that we are justified in the hope of ultimately finding the germ of cancer.

Improved methods of serodiagnostics will give us the disease in its incipency. The future will be active in the practice of prophylaxis, active in the art of healing cancer by rational therapeutics, a specific anti-cancer serum. I feel sure that prophesied results will be realized in time. In closing I have transposed some of Goethe's philosophy:

Wilst du immer weiter schweifen  
Sieh (die Wahrheit) liegt so nah  
Lerne nur (den Keim) ergreifen  
Denn (der Keim) ist immer da.

## TWO INSUFFICIENTLY APPRECIATED BATHS \*

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While it may justly be said that the whole subject of hydrotherapy is not sufficiently appreciated by the medical profession, there are two special baths that are hardly ever used in private practice, though they are by no means very difficult to improvise, which produce certain therapeutic results that could not be obtained in any other way. I refer to the effervescent and the continuous bath.

*The Effervescent Bath.*—The carbonated and the oxygenated bath may be discussed under this heading, the essential feature of both of which is the presence of bubbles of gas. The chief value of the gas lies in the simple physical fact that gas is a much poorer heat conductor than is water, and in the physiologic fact that the degree of our sensation of cold depends on the rapidity with which heat is withdrawn from certain sensory nerve endings in the skin. This is the reason why different substances at the same temperature give us different temperature sensations: why, for instance, a carpet feels warmer than a wooden floor, and the latter seems warmer than stone or cement floor, all at the same temperature. For the same reason, while air at the temperature of 70 F. feels comfortable, water at that temperature feels cold. Gas between 80 and 90 F. feels quite warm, while water at that temperature feels cool. The moment the body is immersed in an effervescent bath, the surface becomes studded with innumerable pearls of gas; and these cause a feeling of warmth to take the place of the chilliness that would otherwise be experienced. That it is the gas that produces this effect can easily be proved by brushing away the bubbles from any portion of the skin while in an effervescent bath at 80 or 90 F. Instantly, a sensation of chilliness is experienced in the part bare of bubbles, to be replaced by a feeling of warmth as soon as the bubbles have formed again. Hence the first rule in the technic of the effervescent bath is: that the patient must not move after having entered the bath, and that he must not be rubbed.

We may now ask ourselves, what is the effect of the effervescent bath on the system; is it that of an exposure of the body to gas or to water at that temperature?

Regarding the circulation this question has been answered by the careful researches of Otfried Müller,<sup>1</sup> who showed that there was practically no difference in the effect of carbonated and of ordinary baths at the same temperature on blood pressure or pulse rate. Baths below the neutral point, 95 F., raise the blood pressure and lessen the pulse rate; the change being the greater the lower the temperature. Plethysmographic observations have shown that, in spite of the ruddiness of the skin due to dilatation of the superficial capillaries, there is contraction of the deeper

\* Read before the West-Side Branch of the Chicago Medical Society, Oct. 17, 1910.  
1. Deutsch. Archiv. f. klin. Med., bd., 74.

vessels, which is evidently the cause of the rise in blood pressure, for the heart at the same time beats more slowly.

All this shows that these baths are not a means of resting the heart, as was erroneously supposed on account of the redness of the skin and the slowing of the pulse produced by them. The heart must expel more blood with each contraction and against a greater resistance. Hence these baths constitute a method of exercising, not of resting the heart. They are, indeed, a veritable heart gymnastic, whose special value lies in the fact that the degree of exercise demanded of the heart can be more exquisitely graded than by any other known agency.

Winternitz has shown that the carbonated bath produces an increase in the depth but a slowing in the frequency of the respirations, which is evidently favorable to the action of the heart.

Matthes<sup>2</sup> has shown that carbonated baths are as effective for the reduction of febrile temperature as are plain baths, and that they are much more pleasant to the patient. He, therefore, advocates them as antipyretic in those fever cases in which ordinary baths produce a good deal of shivering and chilliness. It would be well if this recommendation of Matthes were more generally put into practice. It may be pointed out here again that, in contradistinction to the ordinary cold bath in fever, rubbing must not be applied; indeed, it is not necessary, as the carbon dioxid produces dilatation of the skin capillaries that we induce, much less effectually, however, by the rubbing.

These baths have, as is well known, made a special reputation for themselves in the treatment of heart disease; and one who is not familiar with them is most likely to think of them in connection with the severer cases of cardiac disturbance, and may use them as a last resort when all else fails. Should one, however, commit the error of using them in such a case for the first time, one could probably not be induced to try them again.

Carbonated baths are absolutely contraindicated in all marked disturbances of cardiac compensation; whenever, for instance, there is dyspnea even during rest. They are also contraindicated in cases with a tendency to embolism, with hemorrhages, or with stenocardiac attacks, as well as in angina pectoris.

The effervescent baths are useful in myocardial weakness of all kinds, provided the heart has still some reserve power left or has recovered some reserve power under rest and digitalis. By means of them convalescence can certainly be hastened. They are especially useful in heart disease in which digitalis is not well borne.

The technic of the carbonated bath is, on the whole, quite simple. For a strong bath, two pounds of sodium bicarbonate and one and a half pints of commercial muriatic acid are used. At the first bath, however, only one-fourth of this quantity is used; and, as the temperature of the bath is lowered, the quantity of the effervescing ingredients is progressively increased. It probably is of no very great importance whether the 1, 2 or 3 per cent. of salt are added in more exact imitation of the Nau-

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2. Clin. Hydrother., Jena, 1903.



heim bath or not. The sodium bicarbonate is dissolved first in the bath water; and, just before the patient enters the bath, the acid preferably diluted with an equal quantity of water is discharged underneath the surface of the water from an inverted bottle or an irrigator.

The temperature of the first bath should be 95 to 90 F. If this is well tolerated, the temperature is gradually reduced to 80, and even to 75 F., excepting in arteriosclerotic or in nephritic cases in which it is well not to go below 85 F.

The duration of the bath is at first five minutes; at subsequent baths it may be increased to seven, ten, fifteen, then twenty minutes. The bathroom should be well ventilated, and not warmer than 65 F.

After the bath the patient should not be permitted to dry himself, but should be carefully rubbed dry by an attendant. One hour's rest in the recumbent posture should follow each bath, and rest for a similar period should precede it. In the first week a bath may be given every other day, later every day.

While a healthy person is not distressed by the carbon dioxide given off freely from the bath water, it occasionally happens that a patient becomes dyspneic during the bath. It may be that in just such cases the oxygenated bath, one of the most recent of hydriatic procedures, might be superior to the carbonated bath. For the production of the oxygenated bath the "Perogen bath salts" (Morgenstein & Co., New York, composed of sodium perborate with a catalyzer) or similar product may be used. I doubt, however, whether the oxygenated bath will be found in practice to be much superior to the carbonated bath, most especially as the former does not cause nearly as much hyperemia of the skin and sensation of warmth as the latter; and as, so far as I can see, the effervescent bath owes its value mainly to the fact that it is a cool bath much less unpleasant and much more certain to be accompanied and followed by a good reaction than a plain bath at the same temperature.

*The Continuous Bath* means nothing more or less than putting a patient in a bath-tub full of water, and keeping him there for days, weeks, or months as the case may require. To Hebra, the great dermatologist, belongs the credit of having been the first to use the continuous bath; and pemphigus was probably the first disease in which it was employed. Kaposi kept a case of pemphigus in the continuous bath for four years with the greatest benefit.

The indications for the continuous bath are as follows: (1) for the constant removal of profuse discharges; (2) for soothing effect on the surface; (3) for sedative action on the nervous system; (4) as antipyretic.

1. Unapproachable in its results is the continuous bath in cases with profuse and offensive discharges; as, for instance, from large abscesses or from sloughing rectal or vaginal carcinomata with foul-smelling urinary and fecal fistulæ, or in cases of extensive gangrene. I had the opportunity of studying the effect of the continuous bath on an enormous abscess that had completely undermined the whole of the skin overlying

the pelvis. It had started as an ischio-rectal abscess, broken into the scrotum, and then extended upward on the body in all directions. After free incisions had been made and a voluminous dressing been applied, it was found that the patient saturated his dressings with horribly offensive pus in a few hours, so that it would have been necessary to dress his wound at least four times a day, and even then the odor of the patient would have been almost insupportable. When we placed this man in the continuous bath, he thought that his last hour had come, that his case was so bad that we intended to drown him in order to get rid of him. But he soon found himself very comfortable, and then objected to being taken out of the tub, which we did, however, once a day to cleanse the tub thoroughly and to anoint the skin with petrolatum. After ten days and nights in the bath, the condition had cleared up sufficiently to permit of ordinary dressing. The patient left the hospital in about a month with his wounds practically healed. Somewhat later I had the misfortune of having under my care a very similar case in another hospital. The continuous bath was something unheard of in that institution and impossible to obtain. The patient died of pyemia, evidently produced by squeezing into the circulation some of the infected clots from thrombosed veins during the process of dressing.

2. For its soothing effect on the surface, it is most especially in the treatment of very extensive burns that the continuous bath is almost indispensable in general practice. No matter how extensive the burn, the patient feels quite comfortable soon after having been placed into the bath, the painful process of dressing is altogether dispensed with, suppuration is antagonized, fever kept down, bad odor abolished, and rapid healing favored. It is similarly useful in extensive skin diseases, e. g., pemphigus. The water-bed has long been used in the prevention of bed-sores; but for their cure, in case they have become very extensive or infected, the continuous bath is needed.

3. Prolonged immersion in water at neutral temperature has a wonderfully soothing effect on the central nervous system. Who has not experienced the pleasant languor produced by a warm bath of even moderate duration? Psychiatrists find the prolonged bath one of the best and most harmless sedatives in the agitated forms of insanity. So marked is this effect in mania that it is even considered of diagnostic importance, that is, that a case of mental excitation not favorably influenced by this treatment is probably not a case of mania. However, other forms of agitation and delirium, even delirium tremens, are also usually favorably affected. In destructive diseases of the spinal cord, as in transverse myelitis, with urinary and fecal incontinence, pain, hyperesthesia, paresthesia and spasms, the continuous bath is a blessing, not only by relieving the symptoms by a sedative effect on the nervous system but also by preventing bed-sores which in this condition are generally considered unavoidable.

4. Finally, it may be mentioned that, if the temperature of the continuous bath is kept at a somewhat lower point than the one indicated

above, say about 88 F., it becomes a mild but efficient heat-abstracting medium, much more agreeable to the patient than the cold bath and particularly useful where violent delirium, involuntaries, and a tendency to bed-sores serve as additional indications.

*Technic.*—As the patient is expected to remain in the bath for so long a time, everything must be done to make him comfortable in it. For this reason, a sheet must be suspended within the tub in such a way as to have it clear the bottom of the tub when the patient is lying on it as on a hammock; hence this bath has also been called "hammock-bath." A rubber pillow should be provided for the head, and one for the heels, which latter had better be left out of the water, if possible, as the swelling and wrinkling of the skin produced by imbibition of water causes a disagreeable sensation in them. To prevent this puckering of the skin as much as possible, the whole of the skin should be anointed with petrolatum or wool-fat before the patient is placed in the bath.

The temperature of the water in the tub must not be permitted to exceed 100 F., nor fall below 95 F. If kept within these limits, the bath has practically no effect on the body-temperature, circulation, respiration, or perspiration. A bath between 95 and 100 F. may, therefore, be called a neutral bath. To our skin it gives the sensation of warmth and comfort. To maintain the temperature between these limits, a good supply of hot water is necessary and means are needed for adding it to the tub and for the removal of water when the tub has become too full. This is best secured by a continuous inflow and outflow arrangement, such as is provided, with all other conveniences, in tubs made especially for this purpose by manufacturers of hydropathic apparatus. I believe that a hospital that does not possess such a tub has no right to make the claim of being completely equipped with all modern appliances. Improvization is always troublesome, yet possible. The ordinary bath-tub in private houses is usually large enough for a child, but too small for an adult. The sheet may be suspended by means of carpenter's clamps, also by strong hooks, or by bath seat support. Hot water may be added and removed by the dipperful, or an alcohol lamp may be placed below the bath-tub, if inflow and outflow facilities be not provided with the tub.

The tub is covered with a board to protect the patient against exposure and to serve as a table at the same time, or else blankets may be used, which are kept from becoming wet by putting a rubber sheet underneath them, and placing them on supports laid across the top of the tub.

The patient eats and sleeps in the tub. The constant attendance of a nurse is, of course, required. It is not necessary to remove the patient for defecation, urination, or menstruation. Once a day the patient is lifted out of the water and thoroughly cleansed with soap and brush. The water in the tub is then changed completely and the tub cleansed.

## REAL AND SO-CALLED INCONTINENCE AND ITS TREATMENT

F. KREISSL, M.D.

CHICAGO

In spite of our improved methods of examination, much confusion still exists in regard to the correct diagnosis, and the etiology of the various forms of disturbances in the act of micturition, and consequently the therapeutic attempts often fail. Admitting this to be partly due to careless examination, it cannot be denied that the unfortunate selection and incorrect interpretation of such terms as incontinence, neurosis, enuresis, vesical atony, hypertony and paresis are responsible for many failures to successfully deal with the difficulty.

The term incontinence should designate the inability of the bladder to retain even a small amount of urine as it enters the viscus from above; a condition which we find in paralysis of the vesical sphincter or in acute inflammatory and ulcerative processes in the bladder. As most of us are interpreting the condition, incontinence means the involuntary act of urination along its normal route.

In order to avoid confusion as much as possible the etiology should be considered in the classification of the cases, the best of which, while not an ideal one, has been established by Leguen. He differentiates:

1. Incontinence of traumatic origin.
2. Incontinence of nervous origin.
3. Incontinence produced by reflex.
4. Incontinence of urinary origin.
5. So-called functional incontinence or enuresis.
6. Incontinence of urethral origin in women.

Incontinence may be complete or partial, it may be continuous or appear at intervals, the urine may be expelled in a good stream or in the shape of dribbling.

1. The incontinence of traumatic origin is frequently observed in women after forcible dilatation of the urethra for explorative or operative purposes; as a result of cicatrization at the vesical sphincter after operations for vesico-vaginal fistula; or following a trauma during the act of labor.

In men after injuries to the pelvis and perineum, in accidents involving severe blows, concussion or crushing of the parts, and also as a post-operative complication following prostatectomy. In some of these cases the sphincter resumes its activity sooner or later; others require surgical repair.

2. The incontinence of central origin appears as part of the symptoms of medullar meningitis, myelitis transversa, Pott's disease, osteitis of the vertebrae, diphtheritic paralysis, general paralysis, tabes. Indeed in tabes incontinence is diagnostically a very valuable preatactic symptom, appearing as it often does as the only one and earliest manifestation of the disease. Very generally the incontinence in these cases is a result of anatomic lesions in the course of which the efficiency of the detrusor



muscle becomes more or less impaired. The inevitable result is retention of urine, which, when the quantity passes the normal capacity of the bladder, causes the vesical sphincter to yield to the pressure, whereupon the surplus urine escapes by dribbling. Some of these cases are curable; in others we have to resort to the palliative treatment, the methodical regular evacuation of the bladder by aseptic catheterization.

It might not be out of place to mention the similarity of some of the symptoms of tabes and of neurasthenia. The coincidence of such symp-

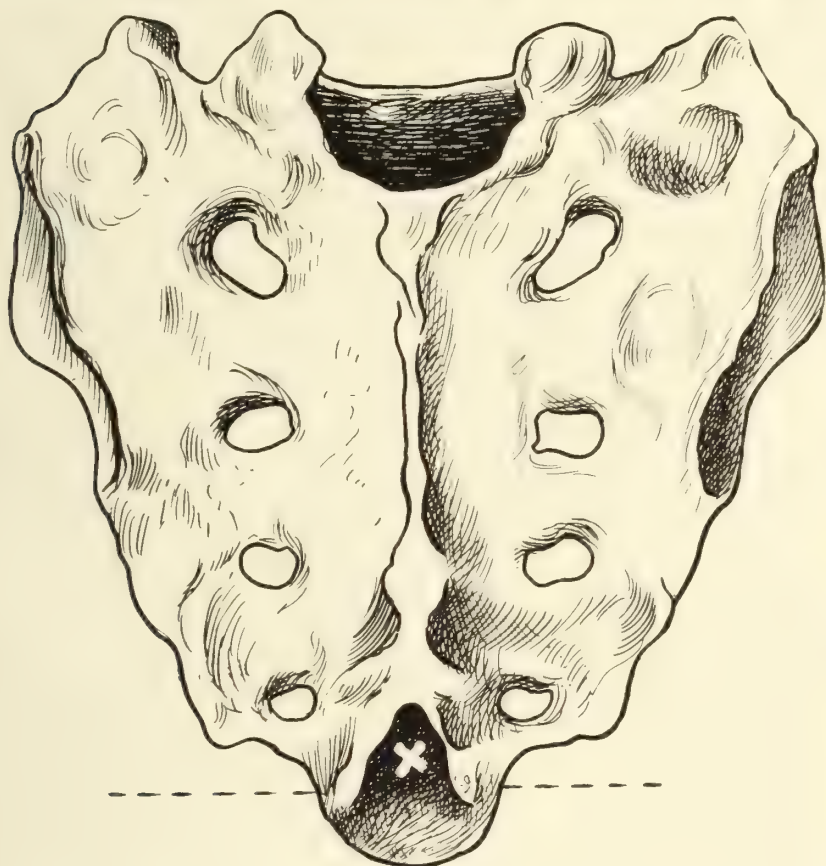


Fig. 1.—Topography of sacral canal, X indicating entrance in epidural canal.

toms with incontinence should therefore not find one off his guard and the possibility of tabes should be considered.

3. Incontinence by reflex is frequently observed in rectal polypus and prolapse, rectal fistula, colitis and anal fissures. It is also a concomitant symptom of subinvolution of the uterus *in puerperio* and of the physiologic involution of the genitals of old women, senile incontinence. The discovery and removal of the original cause will invariably cure the urinary difficulty except of course in senile incontinence. For the latter condition, which does not seem amenable to local procedures, I have found

the epidural injection with physiologic salt solution very satisfactory. The principle and technic of this method I shall discuss later on.

Group 4 includes a large number of various essential troubles in the urinary tract, some due to malformations, others to an inflammatory process and others caused by abnormal constitution of the urine.

In malformations the trouble may originate in retention or be caused by reflex irritation. The mode of action then is explained by a complete or partial inhibition of the cerebral center through an exaggerated excitation of the medullar center. Among the more common malformations causing incontinence I mention atresia of the meatus, urethral polypus and caruncles, congenital urethral stricture and last but not least, phymosis, particularly in the female sex. Especially the latter anomaly, if not recognized and treated as such, is responsible for many failures in successfully combating so-called enuresis.

If a male child or adult suffering from enuresis were to consult us, an examination of his genitals would be the first thought in our mind. Were the patient an adult female an examination might or might not be made, but if she were a girl of from four to fourteen years of age you would hardly think of an examination of her genitals. And yet if an examination of the genitals in these cases were always made one would be surprised how many of them recorded among the incurable ones of enuresis have been erroneously diagnosed as such and are readily amenable to treatment.

The term phymosis, applied to the female, signifies that the hood of the prepuce cannot be retracted behind the clitoris. The extent of phymosis varies from a slight unilateral adhesion to a complete closure of the marginal orifice over the anterior surface leaving a pouch or pocket beneath. The anomaly interferes with the normal function of the clitoris, retarding erection by the restricting bands of adhesions or producing irritation by collection of smegma beneath the prepuce.—(Quirek.)

The treatment is usually very simple, indeed in some cases the adhesions are readily broken up by a Kocher dissector or a probe, the prepuce retracted and that is all that is necessary. In others a simple circumcision is performed and in only a few instances the adhesions are so dense as to require longitudinal splitting of the prepuce preceding the separation and circumcision.

Rarely overlooked as the cause of incontinence are acute inflammatory conditions in the urinary tract. But less known and appreciated as etiologically responsible is chronic pyelitis, pyelonephritis, tuberculosis of the urinary tract and nephritis. Pyelitis is a frequent occurrence in childhood, frequently not recognized and the accompanying incontinence classified as enuresis with subsequent poor therapeutic results.

The incontinence in these cases may be explained by reno-vesical reflex, caused by the renal irritation; the bladder is stimulated to expel its contents. If this impulse reaches the brain center the patient wakes up and empties the bladder. If, however, the impulse is not of sufficient intensity it extends only to the spinal center and the evacuation occurs while the patient is asleep. This form of incontinence is readily differentiated from enuresis by the presence of pus in the urine and the other symptoms of pyelitis or pyonephrosis. An examination of the urine as a routine procedure in every case of incontinence would therefore materi-



Fig. 2.—Diagram showing correct positions of needle. First position to penetrate membrane. Second position to proceed in canal after penetration of membrane.

ally assist in avoiding an erroneous diagnosis and unsuccessful therapeutic measures.

The various forms of cystitis, gonorrheal, coli, tubercular, calculosa, etc., are also likely to produce incontinence and it is clear that a causative treatment will generally suffice to restore normal functions.

Permit me to remind you that tubercular cystitis in childhood is not a rarity. It is more frequently diagnosed nowadays due to improved methods of diagnosis, but the coincidence with incontinence might still lead to pronounce such a case as enuresis, particularly so if the urine seems to be clear. However, it should be remembered that macroscopically clear urine is oftentimes found in renal and vesical tuberculosis as long as no secondary infection occurs. In fact, the presence of vesical or renal symptoms with a persistently clear and acid urine should cause one to suspect tuberculosis in the urogenital tract.

That abnormal constitution of the urine, hyperacidity, phosphaturia, oxaluria, etc., will act as an irritant to the extent of producing more or less congestion in the trigone and vesical neck with subsequent nocturnal incontinence, is too well known to require more than being mentioned for completeness' sake.

The incontinence spoken of in prostate hypertrophy is not an incontinence at all, but an overflow of the much distended bladder enhanced by the displacement of the fibers of the vesical sphincter: anatomically the sphincter still exists but its function as such has ceased. Atrophy of the prostate is accompanied by frequent urination and nocturnal incontinence and is due to the retrogressive process in the sphincter fibers.

5. As enuresis, which may be either nocturnal or diurnal, a disease is designated which occurs almost exclusively among children. In early infancy it is normal, in adult life it is rare and then due to very special reasons. Characteristic of the disease is a sudden expulsion of the entire quantity of urine from the bladder, generally during sleep. The expulsion occurs not only when the bladder is full but often takes place during the early hours of sleep before much urine has accumulated. During the day the child usually has control over its sphincter, although in extreme cases the enuresis is both diurnal and nocturnal. The patients of this group are generally neuropathics, presenting the ancestral inheritance of hysteria, epilepsy, alcoholism, syphilis, mania, neurasthenia, hypochondria or incontinence. The heredity may be either direct or collateral. These children oftentimes present congenital malformations, such as facial asymmetry, harelip, dental defects, cleft palate, strabismus, hernia, ectopic testicle, low forehead.

Even in the absence of such defects some of these patients exhibit other disorders in the sensitive nerves, hyperesthesia, the abolition of the pharynx reflex, abolition or exaggeration of the patellar reflex, tremor, stammering, twitching of the eyelids. The trouble disappears spontaneously as the patients get older, or if persisting up to maturity it ceases as a rule during the first pregnancy or after great emotions or an acute exanthematic disease. It rarely persists, however, up to the age of maturity and it seems as if the awakening of the function of the generative



organs does assist in the disappearance of the disorder by auto-suggestion.

The majority of these cases of incontinence are of psychic origin and the result of a neglect in training of the bladder. However, it is possible that a preceding cystitis or pyelitis might leave the trigone and the vesical neck in a very sensitive condition which in the presence of the above mentioned congenital predisposition will render such children more susceptible to the trouble. And, indeed, on the examination of the urine we find sometimes evidence of slight vesical catarrh and cystoscopically the area around the vesical neck appears more or less congested.

For a better understanding permit me to state that voluntary micturition can be easily performed only when the bladder is pretty well distended.

It is difficult when the organ is nearly empty and the reflex chain thereby rendered imperfect. After early infancy the spinal center for micturition comes more and more under the control of the subcortical inhibition which ultimately becomes dominant so that in adult life retention is very much more common than true incontinence. This physiologic mechanism just outlined still operates imperfectly in childhood, thus the subcortical inhibition is not quite equal to controlling an imperative reflex. Children are therefore more subject than adults to incontinence from vesical over-distention or a physical or psychical shock. There is some diversion of opinion as to the age when micturition becomes at least partly voluntary. Some state that control is acquired during the first year, others give a somewhat later period. At any rate children cannot be depended on to hold their urine longer than fifteen minutes to thirty minutes before the middle of the second year.—(Wachheim.)

Very young infants empty the bladder so frequently because of its very limited capacity. The brain does not yet exert any influence to control the act by contraction of the sphincter fibers; no regulation, no suppression of the desire exists yet, nor any need for it as it does when the child grows older. In some children this process is retarded. The child retains its pollakiuria during the day; it is a slave to its bladder owing to the frequent calls to urinate. During the night conditions are the same as far as production of the urine is concerned; but the sleep being too deep to awaken the child the calls to urinate are not perceived by the cortical center. Hereby the incontinence is established. The child mutters incessantly while asleep, it is thinking and dreaming of the act of micturition and the dream is an occasion for the incontinence. Upon awakening the recollection of the dream has vanished, but the result is palpable and visible. While thus undoubtedly the psychical moment plays an important part in the origin of enuresis, it is equally true that lack of training just at this time is responsible for the forming of a habit, the habit of rolling in filth. The atony of the vesical sphincter, the paresis of the circular fibers of the urethra upon which Guyon has built up his theory and his method of treatment of enuresis does not correspond with the facts because these children have originally the same control over their sphincter like all others.—(Legueu.)

It must be admitted that the diagnosis of enuresis offers some difficulties. But taking into account the anamnesis, the manifestations of hereditary neuropathy and the absence of palpable lesions likely to produce a functional disturbance, it should be possible to recognize real enuresis in the majority of these cases.

Most of the children present a general nervousness, irritability, capriciousness and excessive mental activity. It is furthermore characteristic that enuresis usually begins a few years after control has become estab-

lished. Even after arriving at the conclusion that we are dealing with enuresis, we should consider the possibility of epilepsy. In the latter condition the patient usually presents other symptoms of the disease. Furthermore in the epileptic type incontinence occurs at irregular intervals, rarely night after night and certainly not habitually. On inquiring we might also learn that the child is screaming in his sleep, that he grinds his teeth, that blood-stained froth is observed or the evidence of injuries to tongue and lips. However, some of these attacks are mild enough to pass without any of these manifestations; indeed, if occurring during the day involuntary micturition might take place without a complete loss of consciousness, only a slight dizziness being complained of. The French neurologists call this form of epilepsy *petit mal* in contradistinction to the fully-developed typical attacks which are designated as *grand mal*. In doubtful cases the administration of bromids should be helpful for the diagnosis.

The prognosis of enuresis should be given with a certain degree of reserve on account of the hereditary stigma which is present in the majority of these cases and it becomes more unfavorable the older the patient. It is equally unfavorable when the incontinence is diurnal and nocturnal. These cases are among the most stubborn ones. It is, however, more favorable with the approach of puberty for anatomic and physiologic reasons.

There are few other diseases for which such a variety of therapeutic measures has been devised as for enuresis. Most of them are a signal failure. Others seem to exert some beneficial influence and very few occasionally produce lasting results. I mention the psychic treatment, the attempt to educate the bladder by hypnotic suggestions. Among the mechanical procedures massage of the vesical sphincter through the rectum or vagina gives satisfaction occasionally but the latter route does not recommend itself for obvious reasons. Successful to a certain degree is also the elevation to 30 degrees of the foot end of the bed in which the child is sleeping. Urethral, urethro-vaginal and urethro-rectal faradization is also employed with varying luck. The same applies to vibration, the passing of metal sounds and the application of strong silver nitrate solutions to the vesical neck. It seems that frequently the mental effect produced by these various manipulations deserves quite as much credit for the success as anything else. However, many of these cases are complicated by an abnormal relaxation of the sphincter apparatus of the urethra of which condition you can easily assure yourself by passing a bougie of appropriate size through the deep urethra into the bladder. Under normal conditions you will feel a decided resistance as soon as the instrument enters the membranous urethra, while if passed on a male patient of the above group no resistance at all is encountered: the bougie simply slides into the bladder. It is this class of patients that is mostly benefited by the employment of the faradic current or other irritating applications. Pronounced improvement is observed after endo-urethral faradization, much less if any when the electrodes are placed outside on the perineum in the rectum and above the symphysis. The urethral

electrode, with the exception of the small-sized metal olive tip, should be insulated, the current in the beginning very weak and the application not extending over five minutes. The current should be very frequently interrupted, for instance every five seconds for two to five seconds, as the continuous faradization of any muscle will have a weakening instead of a toning effect. These treatments should be given daily for five days and each time resumed in the same manner after an interval of three days (faradic cycle). Usually four to six cycles will be required.

Among the drugs in vogue belladonna and atropin yield some good results. It does not act, as is believed, by allaying vesical irritation, but as an anti-spasmodic. It is, however, necessary to give belladonna in gradually increasing doses commencing with one-seventh of a grain and pushing it up as high as 1, 2 and even 3 grains. Rapid improvement is occasionally observed after the administration of the extract of *rhus aromatica* in doses of 10 to 15 drops twice a day, and of boric acid in doses of 10 to 20 grains three times daily. The same may be said of bornival, which is dispensed in capsules, three capsules to be taken daily. Sodium bicarbonate will be found useful when the urine of such patients shows a high degree of acidity. It should be given in doses of  $\frac{1}{2}$  to 1 teaspoonful in 2 ounces of water after the evening meal.

A more rational and successful method was devised some years ago by Brissaud.

Its underlying principle is to make the patient perform voluntarily under some responsible person's control the movement which has been so often repeated subconsciously. The child is urged to empty its bladder at regular hours during the day and is awakened at regular intervals during the night, the intervals being timed so as to anticipate and intercept the involuntary act if possible. In moderately severe cases urination should be urged upon arising, at nine o'clock, at noon, at three, six and at bedtime. Bad cases require a two-hours' interval during the day. Since the involuntary urination as a rule occurs within two hours after retiring, the child should be aroused within an hour or an hour and a half, to urinate. This is sufficient for many cases; in others this precaution has to be repeated several times during the night. This treatment I admit makes great demands on the endurance and perseverance of the patient, his family and his physician, but essential for a good result is the strict observance of the exact hour day by day and night after night. It may be assisted by cutting off all fluids in the late afternoon hours and evening, and by restricting the quantity of the evening meal. In addition a general hygienic treatment and tonics will be helpful for the co-existing anemia, chlorosis or other debilities. The treatment should be kept up for several months and then gradually discontinued. It may be stated that even if a cure is effected a tendency to relapse remains, a tendency which is common to all forms of neuroses.—(Wachheim.)

Perhaps the promptest and at the same time a perfectly harmless method which we possess to cure incontinence are the epidural injections of normal salt solution recommended by Cathlin in 1901. A Pravaz or Record syringe holding 10 c.c. is employed with platinum-iridium needles of 6 cm. length and 1 mm. circumference. The child should be placed in the Sims' position with legs flexed and the thighs tightly drawn towards the abdomen, whereby the obturator membrane of the sacral canal is tensely stretched. The sacral region and the skin for quite a distance from the operating field is thoroughly cleansed as before any



other operation, and then the entrance in the sacral canal located by means of certain landmarks which are: The two last (fifth) posterior inferior osseous tubercles and the last spinous process of the os sacrum. By three lines connecting these three points a triangle is formed, the base of which is between the two ossicles and the apex at the spinous process. Just below the latter is the entrance into the sacral canal.

The needle is held firmly between thumb, index and middle fingers of the right hand. The index finger pressed against the apex of the sacral triangle renders the skin tense. The needle held at an angle of twenty degrees to the horizontal is plunged through the tissues until a distinct sensation similar to perforating a tense drumhead is felt, which indicates that the point of the needle has passed through the obturator membrane and entered the sacral canal. The proximal end of the needle is now depressed towards the sacrum and by maintaining its position in the middle line pushed forward into the canal to the length of three to four cm., according to the age of the child.

If pushed up higher than four cm. the subarachnoidal space might be injured; if pushed up less than three cm. the fluid would fail to enter the epidural space. If blood flows from the needle no injection should be then made. If the needle is freely movable sideways it is not in the epidural canal, and another attempt must be made to enter it. If the correct position of the needle is assured, its cap is held with the left thumb and index finger, the syringe attached to the cap, and the liquid slowly injected into the sacral canal. Not more than three to five c.c. of the solution should be injected at the first treatment. The needle is then withdrawn and the region of the puncture is covered with a piece of zinc oxid plaster, or with collodion. The injection may be repeated in from two to five day intervals, and the quantity, if necessary, increased to ten c.c. and even twenty c.c. The effect is sometimes apparent after the first injection; sometimes a dozen or more are required before any result manifests itself. (It is hardly necessary to say that spina bifida is an absolute contra-indication for this method.)

The benefit derived from this method is, in my opinion, due to the direct mechanical effect of the volume of fluid on the spinal centers, a veritable vertebral trauma, the effect of which depends on the quantity of fluid which we inject. In some cases two to five c.c. will suffice; in others as much as twenty, thirty, and even forty c.c. are required. That the favorable results which we secure by the epidural method are not purely suggestive ones, due to an intense physical influence. I have convinced myself by the rapid improvement exhibited in incontinence of insane persons who are not aware of their ailment nor of the method or its purpose. It is further proven by the good results which I have secured by the epidural injections in sexual debility, spermatorrhea and excessive night emissions, in stubborn cases of sciatica and lumbago, in short in all conditions in which an inhibitory effect on the sensory fibers was desirable.

6. The incontinence of urethral origin in women is chiefly caused by defects or by insufficiency. It appears mostly in older women near the



menopause and oftentimes is found associated with a cystocele. The patients when on their feet lose on laughing or coughing or other physical exertions, a few drops or more of urine emanating from the urethra. The condition is very annoying but yields promptly to surgical measures. In some cases the operation on the cystocele is sufficient. In others the urethro-vesical sphincter has become degenerated to such a degree that special steps are necessary. Gersuny's method of twisting the urethra around its own axis to 180 degrees is fairly successful. After twisting, the urethral mucosa presents a folded appearance from one end to the other, and the canal has the shape of two funnels which are touching each other end to end.

Better results and by a more simple procedure are to be obtained by paraffin injections directed towards the vesical neck.

Paraffin or vaselin injections are made through the vaginal wall in different places around the vesical sphincter. In order to avoid injuring the latter with the tip of the injection needle, and also to properly deposit the mass, the index finger, or a metal sound, is inserted into the urethra. Accidents due to injecting into a vein can be avoided by watching the cap of the needle after the latter is placed in the tissues. If blood escapes from the needle its position must be changed before the syringe is attached and the mass injected. Not more than one-half to one cubic centimeter should be used for this purpose.

I also have been able to cure some cases of this group which were due to relaxation of the urethral sphincter by a few epidural injections with physiologic salt solution.

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## CARL SPENGLER'S "I. K." TREATMENT \*

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In a paper published by Carl Spengler in the *Deutsche Medizinische Wochenschrift*, September, 1908, he claims to have shown that the blood serum is not the principal seat of tuberculosis-immune substances of human beings or animals artificially immunized against tuberculosis, or of auto-immunized human beings. On the contrary, according to his researches, it is in the red blood-cells that these immune substances are chiefly produced and accumulated. Indeed, they may often be found in quantities a millionfold greater than in the serum. He insists that when found in the serum they are derived from the erythrocytes, and their presence there is due to antigen influences of a certain strength and through hemolysis. Furthermore, in previously immunized tubercular patients, within half an hour after injecting subcutaneously an antigen there may be observed an increase in the quantity of immune substances in the serum and a decrease of the same in the erythrocytes. There is

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\* Brief review of Immunkörper ("I. K.") theory. We quote liberally, and in some instances literally, from both Spengler and his assistant, Benöhr.

a return after a few days to the usual number of erythrocytes or they are more abundantly supplied. The quantities of serum are probably absorbed or used up by the leukocytes and blood discs which do not appear to be independent producers of these bodies. That the red blood corpuscles are responsible for the production of tuberculosis-immune bodies Spengler claims to have shown in many trials made on healthy animals. He says they are formed, and can be demonstrated, in the erythrocytes within a few minutes after injecting tubercular poison.

He summarizes the results of his experiments as follows:

The blood-serum of immunized human beings and animals agglutinates Koch's testing fluid (1:10,000), but rarely above 1:1,000. The precipitations, likewise, are seldom higher (filtered testing fluid). The dissolved red blood-cells, however, agglutinate and precipitate without exception above 1:10,000. In the case of highly immunized human beings and animals, both reactions go as far as 1:10 and 1:100 millions, the most distinct agglutination frequently beyond this figure even when the serum does not exceed the tituration of 1:1,000. The auto-precipitations never rise so high. Agglutination and precipitation do not run quite parallel, although there exists a certain relation.

Quite analogous are the conditions in the case of the leukocytes and the blood-discs. The agglutinative power, however, is considerably stronger than the precipitative function. The lysins and antitoxins—not the agglutinins and precipitations—are the main immune substances contained in tuberculosis-immune blood, and constituting its therapeutic and immunizatory value.

They are likewise present in the cells in far larger quantities than in the serum.

The lysins possess the power of loosening the sheath of the bacteria in order to lay open and destroy the living protoplasms. In the course of these lytic experiments the interesting and important fact has been manifested that the lytic action follows the law of dissociation. The concentrated lysins display a slight lytic action, the high ones, under certain circumstances, even millionfold dilutions, a pronounced lytic action. A similar though not exactly corresponding action is shown by the antitoxins. It is certain that the antitoxic action likewise does not follow the laws of equivalence. The best of the antitoxic effects approximates to the best of the lytic ones and moves in high grade varieties of immune blood between the thousand millionfold and hundred thousandfold dilution of the immune substances of the blood.

It is also said, that by means of microscopic preparations, one can demonstrate the lytic action of immune blood solution. Glass plates are painted with moist tubercle cultures, and before entirely dry, a drop of immune blood solution, neutral or slightly acid in reaction, in the dilutions of 1 to 100 or 1 to 1,000 up to 1 to 1,000 millions is added, the preparation dried in the incubator for five minutes, then stained and examined, using control preparations. The sheaths of the bacilli are dissolved and there remain only masses of red, waxy, shapeless spots; normal bacilli are rarely present.

This preparation of tuberculosis-immune blood, extracted from the red blood-cells of immunized sheep or rabbits, and designated by Spengler *Immunkörper* ("I. K.") he states, is chemically pure, free from albumin and hemoglobin which produce disagreeable by-effects, and contains one million lytic and antitoxic units in each cubic centimeter.

## ACTION OF "I. K."

Having, therefore, a serum which contains both antitoxins and lysins, we should expect as a result of its administration the following:

1. An antitoxic, direct poison fixing, and antifebrile action. In other words, the disappearance of toxic phenomena such as fever, night sweats, nervousness, sleeplessness, etc.

2. A bacteriolytic action. The lytic elements of "I. K." attack the capsule, dissolve it, and destroy the body within. This action, it is said, seems to run counter to and sometimes masks the antitoxic action, and causes what Spengler terms reaction or destroying fever. He states this is caused by the destruction of large numbers of virulent bacilli, which in turn liberate poison in excess of the immediate and complete antitoxic or poison fixing power of the serum. However, indirectly, by impairing the vitality of the bacteria the fever is eventually lowered.

According to Spengler, there is an improvement in general conditions: better appetite, rapid increase in weight, lowering of temperature, if it has not existed for too long a period, disappearance of rhonci and sputum during the first few weeks of treatment, and most remarkable of all, frequently, after eight to fourteen days' treatment, only a few isolated bacilli are found even when at first they were present in large numbers. However, the fever in very severe hectic cases may persist for a long time, and one should not be discouraged but continue the injections. On the other hand, the fever disappears rapidly in some of these cases which otherwise would be considered hopeless. Even in cases where there is cavitation, and rigid pus-producing walls, one need not necessarily despair.

Furthermore, Spengler claims "I. K." is valuable as a diagnostic agent in latent forms of tuberculosis by causing reaction at the seat of lesion. In tuberculous glands, joints, secondarily infected tonsils, etc., irritative swellings occur which later subside and are said to be due to lytic reaction. Tonsillary and diarrhea reaction are frequently observed; also pulmonary, with increase in amount of sputum, which subsequently decreases. Local reaction at point of injection results sometimes. He further remarks, "it is not always possible to decide at once whether the reaction of an organ is caused by a tubercular, mixed, or pus infection, seeing that 'I. K.' is polyvalent and contains also immune substances against suppuration bacteria, and may, therefore, be used also in septic states."

He insists that "I. K." in itself is perfectly indifferent and innocuous, the treatment simple and safe. Providing the myocardial power is maintained long enough to permit large doses being given for some time, it may be used even in the severest cases of phthisis.

## OTHER TREATMENT IN CONJUNCTION WITH "I. K."

It is absolutely essential to bear in mind that each patient is a law unto himself, and that individualization in the treatment of the disease is the keynote to success. Having this in mind one naturally takes advantage of any therapeutic, dietetic, or hygienic measure that will contribute toward recovery. If there is a myocardial or toxic heart, digitalis, in



some form, either *per os* or subcutaneously, is advised and should be instituted simultaneously with the injections. Blood or albumin iodatum preparations are also advised as tonics.

The frequency with which lues, either acquired or hereditary, and tuberculosis are associated has probably not received the attention it deserves, especially in recent years.

Benöhr, Spengler's assistant, calls attention to the subject and regards it of great importance. He also cites among others who have observed the frequent coincidence of these two diseases, von Schnitzler, Fournier, Senator and Kobert. More recently S. Klein claims to have noted it in 41 per cent. of a large number of cases treated. Spengler, after years of observation, is convinced that a great number of tubercular cases develop from hereditary lues. In other words, the organism is so damaged and injured by the toxins of lues that it is predisposed to tuberculosis. Benöhr states that the clinical experience of tuberculosis therapy of long years' standing actually forces us to assume the frequent presence of syphilis of the lungs, even if it is difficult to show the proof on the dissecting table. The syphilitic lung is generally the "fleshy," hypertrophic lung, especially if the disease is hereditary. If the process has existed for a long time cirrhosis may be combined with this condition and is analogous to cirrhosis of the liver with fibrous induration. A characteristic auscultatory phenomenon observed over the "fleshy" lung is the "Rauschen," or rustling sound, described by Spengler, which conforms to the general syphilitic focus, and is found more frequently over the middle and lower than the upper lobes. It is interposed, i. e., it appears in the last phase of inspiration, and extends over the beginning of expiration. The diagnosis of tuberculosis, combined with syphilis, is made less difficult by observing the following points:

1. The disease is frequently found primarily in the larynx.
2. The bronchi are usually extensively involved, especially in acquired lues, and may be recognized by bronchial symptoms and sometimes by snoring or rattling sounds.
3. There may be extensive involvement of the lungs and the patient appear to be well nourished and in good physical condition.
4. The quantity of sputum is large but contains few tubercle bacilli, even in advanced stages, although there are numerous flat, foggy nuclei which would otherwise be clear and sharp.

In these cases, in addition to "I. K.," iodine is strongly recommended and may be given in hot milk, in doses of 5 to 10 drops (children 1 drop) daily. Sometimes astonishing improvement is shown from its administration in patients in whom a luetic taint cannot be legitimately suspected or proved. However, the result will depend largely on the age of the individual and duration of the disease. During the inflammatory hypertrophic stage, and while the patient is still young, we may expect improvement, while on the other hand, in older individuals, in the stage of cirrhosis, little can be accomplished. Mercury, if used at all, should be in small doses with long interruptions.



## OUTDOOR TREATMENT

Very little has been said in this country concerning the empirical and unscientific method of outdoor treatment now in vogue. The indiscriminate exposure of all patients, at all hours, in all seasons, irrespective of outside temperature or humidity conditions should, in our opinion, merit the severest criticism and condemnation. Whether we accept Spengler's views on the specific action of "I. K." or not, we must at least credit him with having formulated rational rules, based on individualization, for the outdoor treatment of his patients at Davos. They are as follows: (1) nonfebrile patients begin their daily outdoor treatment as soon as the lying-out rooms are warmed by the sun or when the temperature outside makes exposure comfortable without the aid of sunshine; (2) if the outside temperature is low, only those who eat well are permitted to remain out for a long time. If food is not taken in sufficient quantities to manufacture calories equal to, or in excess of the amount dissipated by the low temperature, bad results follow prolonged exposure; (3) patients are not permitted to remain outside if they feel cold and uncomfortable; (4) as a rule, after dinner, they are required to remain out of doors, in bed, or exposed to the sun's rays for two hours.

The percentage of hemoglobin is also an index to the amount of outdoor exposure and exercise permitted. If the percentage is low, all exercise is prohibited, and the time outside during very cold weather reduced. Unless this precaution is observed, loss of weight, and a condition of inanition resembling progressive phthisis may result.

## REPORTS ON "I. K."

Weintrand and Shaeffer report no decided results. Simon is of the opinion its action is doubtful in mild cases and negative in advanced conditions. Alexander failed to obtain good results in eleven advanced cases and is of the opinion it is capable of doing much harm. Gernsheim declines to endorse it after treating eight cases. Kraft maintains it is capable of doing great injury. Roepke condemns "I. K." and believes it worthless. He states that 270 cases of tuberculosis, in various forms, were selected for experimental purposes and to determine the value of the preparation. He believes he is justified in making the following statements:

1. An antitoxic effect of "I. K." was not seen in either high or low temperature cases, nor was a change or reduction in temperature such as tuberculin produces caused.

2. We failed to see a lytic action or change in the number or character of the bacilli.

3. We found neither a marked curative effect in lung, skin, bone, or glandular tuberculosis, nor the Herd-reaction in localized conditions.

4. Because of our experience, based on the clinical observation of 270 cases which were treated according to Spengler's methods, we feel at liberty to conclude that "I. K." is absolutely indifferent and worthless in the treatment of tuberculosis.

On the other hand, Moritz Wolf recommends "I. K." for incipient cases, especially in children. Selter claims to have seen great improvement in glandular and bone cases among children. Miteluseu treated eighty-three patients, fifty-four of whom were incipient and showed improvement. Schmitt-Weingarten reports the cure of a case of lupus. Pumar treated forty-six cases with the following results: dismissed as cured, eighteen; much improved, eighteen; very little improved, two; not improved, two; three died and three discontinued treatment. These were all ambulatory cases, mostly in the second stage, although some of them were in the first and third stages. They were not selected but treated in the regular order in which they came. Nineteen had fever above 38 C. and twelve below 38 C. Of the entire forty-six cases, thirty-one, or 67 per cent., had fever. Westphal believes "I. K." is an invaluable remedy in tuberculosis if it is injected with lengthy pauses and in slowly advancing doses. Awtokratow states that 102 patients out of a total of 150 gained from 5 to 6 kg. in weight. In fifteen the weight did not change; the others showed a loss of from 1 to 3 kg. Many other reports have been published but are omitted for the reason that they are similar, both pro and con, to those mentioned above.

#### METHOD OF TREATMENT AND RESULTS

In incipient cases we usually begin with 0.1 or 0.2 c.cm. of the fifth dilution, and increase the dose by 0.1 or 0.2 c.cm. at intervals of eight days. When a dose of 1 c.cm. of a dilution is reached, we proceed to 0.1 or 0.2 c.cm. of the next stronger dilution and so on. However, one can rarely progress in this regular manner to the original solution without provoking lytic symptoms. If tolerated, the maximum dose of the original solution is 1 c.cm., repeated as often as is thought necessary. In some instances it is advisable to go from the original to the initial dose and increase as before. Again, it may be desirable to advance no further than to the fourth, third, or second dilution, as the case may be, and proceed as in the beginning. In other cases the retrograde method may be practiced. Doses are increased as described above and then decreased in the same way to the fifth or seventh dilution.

Another way is to pass rapidly from one dilution to another, increasing the dose tenfold: i. e., one injects each time 0.1 to 0.2 c.cm. of the next stronger concentration. This is the so-called rapid immunization method, and may be used sometimes in incipient and strictly localized, non-complicated cases of thoroughly inactive tuberculosis.

Lytic symptoms are manifested by increase in cough, quantity of sputum, elevation of temperature, sleeplessness, nervousness, lassitude, etc. Should these symptoms occur, and fail to disappear in a few days, a "relieving injection" of 0.1 or 0.2 c.cm. of the seventh or sixth dilution is given. Usually the effect is prompt, especially if it immediately follows high doses. One can only be guided in a general way by instructions in regard to treatment. In order to obtain the best results it is necessary to sharply individualize.

Dietetic and hygienic measures were, of course, always combined with the use of "I. K." A liberal diet of fats and oils, raw eggs, raw milk, and carbohydrates was advised as indicated. Tonics such as iron, quinin and strychnin were habitually prescribed; also digitalis, iodin, etc., as indicated.

Our cases were classified as follows:

•Class A. Incipient (?) .....	8
Class B. Moderately advanced .....	11
Class C. Advanced or lost .....	5
Class D. Surgical or localized.....	6
Total number treated.....	30

A. Cases with one or both apices involved, cough, with or without sputum. Tubercle bacilli doubtful. Morro test positive.

B. Cases with extensive involvement of one or both lungs. Tubercle bacilli in sputum, marked loss of weight.

C. Cases with extensive involvement, complicated with other lesions.

*Class A.*—In eight cases, without great lung destruction or severe constitutional disturbances, the disease was apparently arrested, there being no abnormal signs at the present writing.

*Class B.*—In eleven advanced cases, with great loss of weight and constitutional disturbances, great improvement occurred. Some symptoms are still present, however.

*Class C.*—Six cases failed to return or continue treatment.

*Class D.*—In six localized tuberculosis cases, three apparently made a complete recovery: one tuberculous adenitis (suppurative), one tuberculous epididymitis, one tuberculous ulcer of cornea.

One case of Pott's disease is improving, shown by gain in weight and reduction of temperature.

One case of tuberculosis of the bowels, lungs, etc., made a good showing but was irregular in treatment. There is improvement in stools, temperature, weight and strength.

*Class A.*—Average length of treatment four months. Average gain in weight 13 pounds. Marked decrease in cough and sputum. Temperature approximately normal.

*Class B.*—Average time of treatment four and one-half months. Evidence of improvement: decrease in cough and quantity of sputum. Gain in weight averaging 11 pounds. Temperature remaining approximately normal.

*Class C.*—Advanced or lost cases: No. 1 discontinued treatment, no improvement; No. 2 remains about the same; No. 3 has had syphilis, extensive involvement of larynx, and is in advanced stage of tabes dorsalis; discontinued treatment; No. 4 also had as a complication, extensive involvement of the larynx and stopped treatment.

*Class D.*—Six cases of localized tuberculosis, showing varied improvement. Nos. 1, 2 and 5 are apparently well. Nos. 3 and 4 are improving.

TABLE SHOWING RESULTS OF TREATMENT WITH "I. K." IN OUR HANDS

CLASS A																				
Patient.	Age.	Duration of Illness.	Weight.	Loss.	Night Sweats.	Temperature.	Pulse.	Respiration.	Cough.	Sputum.	T. B.	Moro.	Duration of Treatment.	Results.	Sweats.	Temperature.	Pulse.	Respiration.	Cough.	Sputum.
Miss E. L. . . .	36	3 mos.	113	5	X	98.6	90	24	1	1	X	P	4 mos.	Imp. . . .	—	98.6	82	20	—	—
Miss E. L. . . .	27	1 yr.	141	5	X	97.4	90	32	1	1	X	P	4 mos.	Imp. . . .	—	98.6	78	20	—	—
Miss E. L. . . .	29	1 yr.	118	5	X	98.8	90	32	1	1	X	P	4 mos.	Imp. . . .	—	98.6	92	24	—	—
Mr. J. C. . . .	28	6 mos.	130	17	X	99	98	34	1	1	X	P	4 mos.	Imp. . . .	—	98.4	86	24	—	—
Mrs. P. S. . . .	23	1 yr.	165	15	X	97	82	24	1	1	X	P	4 mos.	Imp. . . .	—	98.4	80	24	—	—
Mrs. E. L. . . .	21	1 yr.	95	15	X	100	90	24	1	1	X	P	4 mos.	Imp. . . .	—	98.6	80	24	—	—
Miss M. A. . .	30	1 yr.	120	20	X	100	120	28	1	1	X	P	4 mos.	Ap. crd.	—	98.4	82	24	—	—
Miss B. C. . .	25	1 mo.	160	12	—	98.8	100	28	1	1	—	P	4 mos.	Ap. crd.	—	98.6	78	24	—	—
CLASS B																				
Mr. R. M. . . .	41	2 yrs.	115	40	X	103	120	30	3	3	X	P	6 mos.	Imp. . . .	—	98.8	84	22	—	—
Mrs. F. B. . . .	26	4 yrs.	104	8	—	98.6	80	24	3	3	X	P	4 mos.	Imp. . . .	—	98.4	88	22	—	—
Mrs. M. H. . .	28	5 yrs.	102	10	X	99.4	100	24	3	3	X	P	6 mos.	Imp. . . .	—	99	80	22	—	—
Mr. E. L. . . .	48	2 mos.	140	5	—	101	98	28	3	3	X	P	5 mos.	Imp. . . .	—	98.4	92	24	—	—
Mr. F. D. . . .	30	1 yr.	146	19	X	103	124	32	3	3	X	P	3 mos.	Imp. . . .	—	98.4	80	24	—	—
Mrs. M. R. . .	34	3 yrs.	98	12	X	99.5	84	24	2	2	X	P	3 mos.	Imp. . . .	—	99	80	24	—	—
Mrs. A. D. . .	34	1 yr.	102	23	X	98.8	118	30	2	2	X	P	3 mos.	Imp. . . .	—	98.4	84	26	—	—
Mr. F. A. . . .	29	2 yrs.	140	7	X	99.2	120	22	1	1	X	P	6 mos.	Imp. . . .	—	98.4	80	28	—	—
Mrs. M. L. . .	47	3 yrs.	84	9	X	99	84	24	1	1	X	P	5 mos.	Imp. . . .	—	98.2	80	28	—	—
Mrs. E. W. . .	50	2 yrs.	85	35	X	99.2	88	22	2	2	X	P	5 mos.	Imp. . . .	—	98.4	86	28	—	—
Mrs. M. C. . .	61	2 yrs.	109	30	—	100	94	22	2	2	X	P	6 mos.	Imp. . . .	—	99	90	26	—	—
CLASS C																				
Mr. E. G. . . .	48	3 yrs.	124	16	X	101	127	28	2	2	X	X	3 mos.	.....	X	99	120	24	3	3
Mr. J. S. . . .	39	20 yrs.	126	5	—	99	110	26	2	2	X	X	3 mos.	.....	—	98.8	108	29	2	2
Mr. W. S. . . .	41	10 yrs.	114	40	—	102	100	26	3	3	X	X	1 mo.	.....	—	99.2	92	24	—	—
Mr. E. P. . . .	32	5 yrs.	134	10	X	100	140	28	3	3	X	X	3 mos.	Imp. . . .	—	98.6	80	24	—	—
Mr. R. M. . . .	32	1 yr.	153	12	—	99	80	22	2	2	X	X	2 mos.	Imp. . . .	—	98.6	80	22	—	—
CLASS D																				
Miss E. L. . . .	20	2 mos.	123	2	—	98.8	98	24	—	—	—	P	3 mos.	Imp. . . .	Corneal ulcer.	.....	.....	.....	.....	.....
Mr. R. S. . . .	28	2 mos.	123	—	X	98	98	24	—	—	—	P	6 mos.	Imp. . . .	T. B. epididymis.	.....	.....	.....	.....	.....
Mr. M. B. . . .	7	1 yr.	57	—	X	100	90	24	1	1	—	P	6 mos.	Imp. . . .	T. B. hip joint.	.....	.....	.....	.....	.....
Miss V. S. . .	20	6 mos.	120	—	X	100	90	28	—	—	—	P	6 mos.	Imp. . . .	T. B. adenitis.	.....	.....	.....	.....	.....
Miss S. B. . .	15	2 mos.	120	—	—	—	—	—	—	—	—	P	6 mos.	Imp. . . .	T. B. gland (sup.).	.....	.....	.....	.....	.....
Mrs. G. P. . . .	34	2 yrs.	107	3	—	98.4	84	—	X	—	X	P	6 mos.	.....	T. B. bowels (in stools, urine, sputum).	.....	.....	.....	.....	.....

Signs and abbreviations: X means present; —, absent; D, decreased.



No. 6, while receiving injections, shows a decided improvement but does not receive treatment regularly.

Most of our patients showed rapid changes following the first few injections of "I. K." These changes are noted in the improved general attitude, in an increase in appetite, strength, weight, breathing, decrease in cough in most instances, and quantity of sputum. Of our patients, 75 per cent. were at work constantly; some could neither afford proper food nor live in the proper environment. There was a history of syphilis in five, or 16 per cent. of our cases. Tubercle bacilli were found in the feces of four, or 13 per cent.

In some cases there was evidence of a so-called negative phase. Reactions, or intense lytic symptoms, should, if possible, be avoided. We believe great harm can result from careless or improper use of this preparation. The same caution should be observed in the use of "I. K." as is exercised in the administration of tuberculin.

In conclusion, we would say that from our experience, irrespective of what the final results may be in our cases, we believe "I. K." if properly used, is a valuable remedy in the treatment of tuberculosis.

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## THE PREVENTION OF HEMORRHAGE IN PULMONARY TUBERCULOSIS BY THE ADMINISTRATION OF AUTOGENOUS VACCINES; SECOND REPORT \*

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In a report published in the *Journal A. M. A.*, Dec. 24, 1910, I compared the percentage of hemorrhage in twenty-one cases receiving autogenous vaccines with the percentage of hemorrhage occurring in sixty cases under exactly the same conditions not receiving vaccines. It was found that the percentage of hemorrhage in cases receiving vaccines was 4.8 per cent. while in the group not receiving vaccines the percentage of hemorrhage was 15 per cent., three times as great. The conditions of housing, exercise, diet, medical supervision, climate, season, etc., were exactly the same in both groups. The suggestion was made that hemorrhage, being due to the weakening of the blood-vessels resulting from tissue dissolution, and tissue dissolution being very likely due to the action of pyogenic organisms, the antibody production due to the administration of autogenous vaccines may have been sufficient to inhibit the further invasion of these organisms and thus to have prevented hemorrhage. Since this report was written, March 1, 1910, thirty-five more cases have been treated with autogenous vaccines at the Ottawa Tent Colony and the comparative absence of hemorrhage in this group is as marked as in the group reported on.

The majority of hemorrhages from the lungs are due to tuberculosis. Stricker found 221 of 480 hemorrhages were due to tuberculosis and in 196 more this was probably the cause. See<sup>1</sup> says: "Aside from infectious diseases, hemophilia, and acute infections of the lungs (pneumonia, abscess, gangrene) we only know of two real causes of hemoptysis—heart disease and pulmonary tuberculosis."

The pathologic conditions preceding hemorrhage vary with the stage of the disease. In early cases it may be due to localized hyperemia in the lung induced by violent or long continued exercise; or more likely, due to a weakening and erosion of small blood-vessels by the growth of tubercles. The connective tissue of the adventitia is more resistant to dissolution than the surrounding pulmonary tissue, and vessels stand out in the walls of cavities unsupported; on these unsupported vessels aneurysms develop and hemorrhage results with a weakening of the wall of the aneurysm and any slight rise in blood pressure.

\* Work done under the Max Pam Research Fund.

1. Klebs: Tuberculosis, ed. 1, New York, 1909. Appleton & Co.

That slight rises in blood pressure have an important bearing on hemorrhage is seen in the effect of over exertion, straining at stool, premenstrual congestion, overfeeding, excitement, worry, temper, etc., on this condition. Heredity, age, and sex are factors of minor importance in the production of hemorrhage in pulmonary tuberculosis. The season of the year is a comparatively important factor; hemorrhages being usually most frequent during the hot spells in the summer, but epidemics of hemorrhages have occurred at other periods of the year, frequently in the winter and spring. These, I believe, are due to epidemics of "colds," influenza, etc.

The influence of mixed infection on hemorrhage is not given by any of the authors I have consulted, but Flick concludes from the bacteriologic studies made by Ravenel,<sup>2</sup> Irwin and himself that the pneumococcus is an important agent in the production of hemorrhage. The data presented do not justify the conclusions drawn. The influence which secondary infection may exert on the pathologic changes occurring in pulmonary tuberculosis is by no means definitely known. Examination of the sputum<sup>3</sup> reveals but little in a majority of cases because so many of the secondary organisms found in the sputum are found under normal conditions living saprophytically on the mucous membranes in various parts of the respiratory tract. Post-mortem bacteriologic and histologic examination of the lung yields but little; terminal, agonal and post-mortem invasion are such important factors. Up to the present organisms of secondary infection have been found in the blood during life in only a few far advanced cases. Panichi<sup>4</sup> got four positive results out of some thirty-five cases examined. The results of most other investigators (Jochman,<sup>5</sup> Benöhr,<sup>6</sup> and Reiche<sup>7</sup>), were almost entirely negative. During the past year I have made blood cultures during life on 100 cases of pulmonary tuberculosis representing all stages of the disease. By drawing a comparatively large quantity of blood and using a careful technic in cultivation I have been able to isolate definite strains of streptococci and pneumococci in 35 per cent. of the cases examined. This, I believe, proves that mixed infection is a very important factor in pulmonary tuberculosis. The results of these studies will be published in a separate report. Mixed infection is undoubtedly an important factor in pulmonary tuberculosis and the pyogenic cocci cause more tissue destruction than the tubercle bacillus in a majority of cases.<sup>8</sup> Is it not possible that through this tissue destruction they cause hemorrhage and that by checking their invasion by the administration of autogenous vaccines hemorrhage is prevented? Weaver<sup>9</sup> has shown that injections of killed streptococci protect rabbits against subsequent injections of large numbers of

2. Ravenel and Irwin: Phipps Inst. Rep., 1906, 111, 229; iv. 392.

3. Laird, A. T.: New York State Journal of Med., viii, 576.

4. Panichi: Berl. klin. Wchnschr., 1908, No. 41, 1840.

5. Jochmann, G.: Deutsche. Arch. f. klin. Med., 1905, xxxiii, 558.

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7. Reiche, T.: Med. Klinik., Berlin, 1909, v, 1962.

8. Prudden, T. M.: New York Med. Jour., 1894, lx, 1-11.

9. Weaver, G.: Jour. Infect. Dis., 1908, v, 589.

living virulent streptococci. The work of Wright<sup>10</sup> and others has shown that injections of killed and attenuated bacteria have a protective effect against subsequent infection. Abundant proof of the efficacy of active immunization is furnished by Pasteur's inoculations in chicken cholera, anthrax and hydrophobia, Jennerian vaccination, and antityphoid inoculation. The data on protective inoculations against pyogenic infections are very meager, but the results that have been obtained in therapeutic inoculations against the gonococcus, streptococcus, staphylococcus, pneumococcus, etc., especially in chronic, subacute, and localized infections, seem to show that injections of killed organisms hasten recovery and protect against relapse. Webb<sup>1</sup> has used killed organisms against mixed infection in tuberculosis and has observed a protection in inoculated cases against influenza. Five patients inoculated against influenza with their own organisms, and eight inoculated against influenza with stock vaccines, all giving histories of repeated former attacks, escaped the epidemic. Preventive inoculations were not given in thirty-two cases, the patients denying that they ever had influenza, and fifteen succumbed to an influenza epidemic.

Since June 15, 1909, I have administered autogenous vaccines in eighty-four cases of pulmonary tuberculosis at the Ottawa Tent Colony. Of these eighty-four cases fifty-six were under observation two months or longer. Patients not under observation at least two months are not included in this report. It has been observed that during the past nineteen months, June 15, 1909, to Jan. 15, 1911, hemorrhages have been less frequent than before. The class of patients, diet, exercise, sleeping conditions, supervision, etc., were practically the same as in preceding years; the only new factor introduced into the treatment was the administration of autogenous vaccines. It has occurred to me that possibly the injection of vaccines against the organisms of mixed infection had a protective action against tissue dissolution and hence against hemorrhage. In all cases considered in the class receiving vaccines at least three doses of vaccine were administered.

In thirty-two cases vaccines were made from organisms isolated from the sputum. In twenty-two cases vaccines were made from organisms isolated from the blood stream. The whole group of fifty-four cases is compared with the group not receiving vaccines and the cases receiving vaccines made from organisms isolated from the sputum and blood are considered separately. The results are tabulated as follows:

TABLE 1.—HEMORRHAGES BETWEEN JUNE 15, 1908, AND JAN. 15, 1911. PATIENTS NOT RECEIVING VACCINES

No. Cases.	Hemorrhages.	Per cent. Hemorrhages.
Incipient . . . . . 66	..	..
Advanced . . . . . 131	31	15%
Far advanced . . . . 10	..	..
Total . . . . . 231		

10. Wright, A. E.: *Studies in Immunization*, ed. 1, London, 1909; Constable, etc.



TABLE 2.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND JAN. 15, 1911. PATIENTS RECEIVING VACCINES MADE FROM ORGANISMS ISOLATED FROM SPUTUM OR BLOOD

No. Cases.	Hemorrhages.	Per cent. Hemorrhages.
Incipient .....	6	..
Advanced .....	3	5.5%
Far advanced .....	6	..
Total .....	54	

TABLE 3.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND JAN. 15, 1911. PATIENTS RECEIVING VACCINES MADE FROM ORGANISMS ISOLATED FROM THE SPUTUM

No. Cases.	Hemorrhages.	Per cent. Hemorrhages.
Incipient .....	2	..
Advanced .....	1	3.1%
Far advanced .....	5	..
Total .....	32	

TABLE 4.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND JAN. 15, 1911. PATIENTS RECEIVING VACCINES MADE FROM ORGANISMS ISOLATED FROM THE BLOOD

No. Cases.	Hemorrhages.	Per cent. Hemorrhages.
Incipient .....	3	..
Advanced .....	2	9%
Far advanced .....	3	..
Total .....	22	

TABLE 5.—RESULTS IN CASES SHOWING DISTINCT HEMORRHAGIC HISTORY PATIENTS NOT RECEIVING VACCINES

No. showing Hemorrhagic History.	Hemorrhages while in Institution (3 to 5 months).	Per cent. Hemorrhage.
8	3	37.5%

TABLE 6.—RESULTS IN CASES SHOWING DISTINCT HEMORRHAGIC HISTORY. PATIENTS RECEIVING VACCINES

No. showing Hemorrhagic History.	No. Having Hemorrhages in Institution after Vaccine was begun (3 to 5 months).	Per cent. Hemorrhage.
11	1	9.1%

From these tables it is seen that the percentage of hemorrhage in cases receiving vaccines is approximately one-third of that in cases not receiving vaccines. It is also seen that the percentage of hemorrhage in cases treated with vaccines made from organisms isolated from the sputum is very much lower than it is in cases treated with vaccines made from organisms isolated from the blood. The results shown in cases showing hemorrhagic tendencies are very suggestive of the protective effect of the vaccines. In two cases not included in the above tables the preventive action of the vaccines is shown.

Case 1. Advanced. Active. Two severe hemorrhages Jan. 28 and Jan. 29, 1910. Vaccine February 7 to June 27 in biweekly doses. No further hemorrhage.

Case 2. Far advanced. Active. Three hemorrhages before entering institution. One Sept. 16, 1910, and one Oct. 7, 1910. Vaccine begun October 8 and given in biweekly doses until Jan. 6, 1911. No further hemorrhage.

## CONCLUSIONS

While it is not admissible to draw definite conclusions from a study of fifty-six cases, the results are indicative, confirm the suggestion drawn from a study of twenty-one cases and I believe, will justify the administration of autogenous vaccines in a large number of cases as a protective measure in the same way typhoid inoculations are used in the prevention of typhoid fever.

I wish to thank Miss Elizabeth Byrne and Dr. A. M. Calvert for assistance in carrying out this work.

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REVIEW OF THE WORK OF J. W. VAUGHAN, WITH A  
REPORT OF TWO CASES TREATED WITH THE  
VAUGHAN CANCER RESIDUE

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Carcinomatous growths have been recognized since the time of Hippocrates and although prior to the perfecting of the microscope their classification was not on any definite basis yet their rampant growth, attended as it is with almost inevitable destruction of life, has been known and studied.

Numerous theories as to the cause of these neoplasms have been advanced with the hope that, the cause being demonstrated, a cure might soon be effected.

In 1838 Müller published the first important work on "The Cellular Nature of Cancer and Other Neoplasms." In 1858 Virchow elaborated on this theory and promulgated his well known aphorism "*Omnis Cellula e Cellula*." Cohnheim propounded a modification of this idea in that he stated that, "the only cells capable of producing tumors are those which, produced in excess during intrauterine life, lie dormant until some irritating power, either chemical or physical, causes them to multiply to a marked degree thus forming an embryonic new growth late in life." This theory explains the origin of many of these tumors but falls short when applied to others.

The adherents of the parasitic theory of the pathogenesis of cancer feel that ultimately it will prove to be of infective origin, which infection is due to a micro-parasite which selects an epithelial cell. While numerous micro-organisms have been demonstrated at various times to be fairly constant in these growths, yet many expert workers along this line contend that they are a result and not a cause, that micro-organisms invading the body find these neoplasms a favorable nidus for growth and consequently terminal infections occur.

Dr. J. W. Vaughan in a paper read before the Detroit Academy of Medicine, entitled "Some Modern Ideas of Cancer," says, "observation of pathologic changes caused by parasitical invasions teaches us that the first change is always one of local tissue destruction. Such is not the

case with cancer. The first positive sign of an epithelioma, for instance, is a loss of the distinct limiting border between the epithelial cells and the connective tissue beneath. In other words when the pathologist tells us, this may or may not be cancer, it is suspicious, the section he has examined shows in no instance cellular destruction, but simply an increase in the number of cells in that locality, with a probable loss of limiting membrane."

Ehrlich contended that cellular activity was in all probability due to definite chemical changes which for some reason or other take place in the cell itself.

Vaughan offers an explanation of this cellular activity by stating that "the power of reproduction is inherent in the cell itself and varies in different tissues only in degree." He argues that "under normal conditions reproduction and destruction continue in such proportion that the balance is always correct. As this process of reproduction varies with the need it is probable that it is dependent, at least to some extent, on outside influences." Reasoning by analogy from the lower forms of life in which this property of reproduction is inherent in the cell itself, he assumes that, "each cell possesses a definite chemical ferment which controls its power of division and reproduction." As this power is not active at all times he asserts that "in all probability this reproductive element is stored within the cell as a zymogen which is changed to an active ferment when more cells are demanded, this being dependent probably on some form or irritation mechanical, chemical or otherwise." He calls attention to the fact that "a low grade of irritation, insufficient to cause cellular death, is a frequent factor in the growth of a cancer and he assumes that in a condition of malignancy no pre-enzyme state exists in these cells, but that the active ferment is always present, so that this predominates and the total function of the cell is now one of reproduction only, its whole nature is changed, it is a true autogenous parasite."

In a later paper by the same author he says, "The occurrence of a few cases of spontaneous recovery together with the knowledge that most malignant tumors have so-called periods of quiescence, must lead us to believe that the body itself forms the specific ferment for the destruction of malignant cells."

Experiment teaches us that a rabbit can be so sensitized to the blood of a guinea pig that a sufficiently large second dose will kill the rabbit. We know now that great care must be exercised in giving diphtheria anti-toxin after an interval of two weeks has elapsed since the injection of the initial dose, as the patient is sensitized to horse serum." In dealing with the process of sensitization in cancer Dr. Vaughan says "a slightly different problem confronts us and the fact that the body cannot be sensitized to its own body cells must be taken into consideration; again, cancer cells are altered normal cells; hence might be classed as foreign proteid. What comprises the process of sensitization? If a small amount of egg albumin is injected under the skin, chemical changes must occur in the cells that cause the removal of this substance so that it may be

split up and combined with them. After this the body fluids, either in cellular or serum elements, possess a new ferment which is capable of splitting up a second dose of egg white in a short time. A new enzyme is present which is destructive for this function alone. If we regard cancer cells as altered normal cells or practically as foreign proteid, we can readily see that, in splitting up the cancer cell a new enzyme is formed, a specific ferment, which is capable of taking care, in some cases, of all cancer cells present, and in these we have our retrogressions or spontaneous cures." In cases wherein sufficient ferment is apparently not present the author attempts to increase the amount by subcutaneous injections of non toxic cancer residue in the hope that as the body cells take up this foreign proteid sufficient ferment will be formed to split up all cancer cells present.

Such in brief is the work of Dr. Vaughan and in making a plea for the use of this residue the doctor urges that in no way does this argue against radical surgical procedure in all cases wherein this is possible or expedient, but as an adjunct to operative procedure, as a therapeutic agent in cases of recurrence or in those which when first seen are inoperable, he begs for it a trial.

My experience with the cancer residue prepared after the manner of Vaughan has been limited to two cases and in accordance with your request I shall report them in detail.

CASE 1.—Mrs. F., aged 56 years, has three children. Family history negative. Fourteen years previous to our seeing her had been operated on for cancer of the breast. There was no local recurrence. In February, 1910, noted presence of bloody vaginal discharge; there was some slight distress in lower pelvis but no marked pain. Trouble increased continually and we first saw the case about June 7, 1910. Examination of cervix showed entire left side of os covered with a malignant ulcerating growth which bled easily and was painful. Uterus was fixed; there was dense infiltration of posterior wall; sacral and lumbar glands were involved. The growth was too extensive for radical removal. Frozen sections showed it to be a squamous celled carcinoma of the cervix. On June 11 curettage was done followed by a thorough application of the actual cautery as advocated and practiced by Gross the elder. Later a 1 per cent. autogenous residue prepared after the method of Vaughan was injected. Although she had been suffering intense pain for some time it was to a marked degree alleviated after the first injection although it was never entirely eradicated in this case. Injections of the residue were given about every fourth to sixth day, being controlled by a differential blood count. In an effort to determine in what part of the blood the specific ferment which splits up the cancer cell is formed, whether in cell or serum, daily differential counts were made in about twenty-five cases under treatment by Dr. Vaughan and careful records kept. The results were altogether too uniform to be merely accidental. During the first twenty-four to forty-eight hours a relative increase takes place in the polynuclear cells; following this we have a gradual decrease in these cells with a corresponding increase in the large lymphocytes, which take on numerous vagaries of size and shape. This in turn is followed by a second increase or rather a return to normal of the polynuclear cells and a relative decrease of the mononuclears. This blood count is used as an index for treatment and injections are given during the reascending scale of the polynuclears. In this case the highest percentage of polynuclears was 90, the lowest 60. Highest percentage of large lymphocytes was 22, lowest 7. Ten days after the initial dose of residue profuse hemorrhage occurred; controlled by packing. Examination of the cervix at this time showed clean granulating



surface. Throughout July patient felt much stronger in every way, appetite improved, very little discharge from growth. Aug. 1, uterus again cauterized. Evidence of growth in all directions. Sepsis at this time was marked, temperature frequently reached 103 and 105. Recto-uterine fistula present. Pain increased. Emaciation extreme. Abdominal distress, anorexia and indigestion constant. Death occurred September 3, following a severe hemorrhage. This case because of its rapid growth and evident metastasis of the liver from the mammary cancer fourteen years previous, was a discouraging one to treat, yet even in this case rapid although temporary improvement followed the use of the cancer residue. We know that pain was held in abeyance although not checked entirely and many days were spent by her in comfort. I have not been able to learn anything definite in regard to the pathology of the breast tumor, except that it was a hard cancer. Whether there existed any connection between it and the uterine growth I can not say. Gross reports that in 5.2 per cent. of his breast cases the uterus was involved later. Clinical symptoms showed evident liver metastasis and her digestive disturbances had been marked for several years prior to the uterine involvement.

Case 2.—Mrs. D., aged 33 years. Family history negative. Previous health good. No T. B. In 1905 first noticed small tumor in lower outer quadrant of right breast. We first saw patient in September, 1909. Tumor mass about  $1\frac{1}{2}$  by  $2\frac{1}{2}$  inches; dense, adherent, with occasional lancinating pain. Axillary glands palpably enlarged. Radical operation after Jackson done Oct. 10, 1909. Recovery uneventful. Microscopic examination of the tumor showed increased connective tissue stroma interspaces filled with irregular masses of epithelial cells, many of which were undergoing mitosis. All glands removed were involved and the larger ones were composed almost wholly of cancer cells. In January, 1910, she began to cough persistently. We again saw case May 9, 1910. No evidence of recurrence "in loco" except one small pin-head sized nodule in lower scar. Auscultation of chest disclosed bronchial rales over entire left side, due as we supposed to pressure of enlarged bronchial glands. Was complaining of peculiarity of vision, stating that something seemed to fall down in front of left eye. We referred her to Dr. Adams who made the following report: "Eye reflexes a little slow. Refraction of eye shows three diopters of myopia. Retinal vessels larger than in right eye. Eye ground smooth and uniform. Optic disc normal in appearance. Tension normal, no pain or other symptom of trouble except inability to see well, attended by a sensation of heaviness. Eserin was prescribed and on the following day a condition of hyperopia was found showing the apparent myopia to have been due to muscular adjustment. On the two following visits the visual axis of the eye was still becoming shorter or more far sighted."

Loss of function was rapid and on returning to her home in Chicago was obliged to again consult oculist who advised enucleation of left eye because of rapidly growing tumor in posterior fundus. This was done May 21, and at that time several large nodules were removed from left shoulder and thigh, although three weeks previous a thorough examination failed to detect a single tumor formation. In but a few weeks these nodules appeared in neck, scalp and shoulders; large nodules formed in left breast and all of left axillary glands became involved. Several appeared on anterior surface of abdomen. Dissemination was rapidly wide spread.

Rodman in his excellent monograph on diseases of the breast gives an accurate account of the lymphatic distribution in this region. He divides these vessels into a cutaneous and a glandular group. These he again divides, the cutaneous into a peripheral and central group and the glandular into principal and accessory. The principal chain originates

in the peri-lobular spaces and terminates in a subareolar plexus from which two trunks, an internal and an external, are given off, both of which drain into the axilla. He then describes the accessory channels as four. 1. The inter-mammary, arising from the inner extremity of the mammae. This perforates the greater pectoral and internal intercostal muscles and empties into the glands of the mammary chain. 2. The sub-clavicular, from the posterior wall to the subclavian glands. 3. The accessory axillary, which passes directly to the axilla. 4. And in this case probably the most important, several small vessels which, arising from the inferior border of the gland, traverse the great pectoral muscle and pass into the thorax through the fourth intercostal space. Some of these branches follow the intercostal vessels to the spine, from thence into the skull. Senn argues that not only is this true, but cancer cells permeate vessels walls and travel in the capillaries until arrested, forming minute emboli, or they adhere to the vessel wall and mural transplantation takes place.

All authors seem to agree that the involvement of the choroid is embolic and this explains the fact that the left eye is more often affected than the right.

Parsons reports that in 1903 he was able to collect thirty-three cases and states that in all about fifty cases have been published. He affirms that they are always secondary, there being no epithelium in the choroid from which a primary epithelial tumor could spring. In twenty-four out of thirty-one cases the primary tumor was in the breast.

Wagner states that rapid local dissemination of the tumor in this location is its principal clinical feature. This patient early in June, 1910, was sent to Dr. Vaughan who prepared for her an autogenous residue. This he injected for several weeks. As her vision gradually diminished he ordered her back to us for further treatment. I made daily differential counts of her blood and in spite of repeated injections of her residue failed to note any variation in her blood count. He was so advised. The right eye was now much involved; cough was incessant; appetite nil; nausea frequent and condition bad in every way. Again Dr. Adams examined her and reported fundus of right eye almost filled with tumor mass springing from the choroid, which had detached retina except at upper inner portion. Tension slightly raised, no pain.

At this time we began using a new residue prepared from a patient with a very malignant breast tumor. Improvement followed; cough became nil; appetite increased; nodules apparently became smaller and she asserts that several have entirely disappeared. Intestinal symptoms have largely subsided; appetite is good; cachexia has not diminished.

One thing we know, these cases of metastatic involvement of the choroid usually grow rapidly and sometimes cause intense pain. Apparently there is but little increase in the size of the tumor. The tension is but slightly raised. There has been absolutely no pain except for twenty minutes in this eye. Occasional pain occurs along the median nerve, in the right arm and in spite of the fact that a two inch nodule occupied the left axillary space and was firmly adherent, when she

returned to us in July there had been no edema of the arm and no impairment of its usefulness.

These reports may seem discouraging, yet when we consider that in both these cases extensive metastasis had taken place long before beginning treatment, I feel encouraged over the results obtained and it seems to me that this method of treatment is justified: in cases of recurrence after operation; in cases which when first seen are inoperable; in cases wherein no hope exists—because it alleviates pain, can do no harm, and may by repeated experiment lead to a fuller, more complete knowledge of the best method of its use. For only by large numbers of case reports, with accurate records, can we hope to solve the problem of “The Effects on Malignant Growths of the Vaughan Cancer Residue.”

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## MYOPIA OF THE MEDICAL PROFESSION

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The relation of medicine to social and business life is constantly changing, necessitating readjustment from time to time. Labor has organized for protection while capital has combined for protection, and each of them receives medical and surgical care for a fee much less than the customary charges.

The labor unions reduce the number of working hours at increased wages. They elect a physician who contracts to give medical and surgical aid for so much per head. The fee is often a dollar or less per year for each member, with no objection if the women and children are thrown in for good measure. The doctor must make calls night or day, and as often as desired, for \$1.00 per year. Many of the fraternal orders have, as their chief attraction, a free doctor any time you want him. Some of these orders are finding medical men willing to do this work for practically nothing. Organized labor will expel its members for working for less than contract price, or outside of working hours.

This does not apply to the doctor's fee or hours. If organized labor is not paid as per contract, there is a strike and tie-up. If a unionist does not pay his physician there is no tie-up in the profession. The laborer is so much ahead and a score of doctors ready to take the place of the unpaid doctor. You can not point to an instance of organized labor breaking their scale because the contractor is poor. If you can not pay the scale there is no work.

The employer has sought protection by insuring the employee against accident, in a company which has a doctor under contract for one-third to one-half the fee customarily charged for such work. The doctor is paid for his first aid only. The employer has now dumped the injured into the care of the surgeon for the price of first aid charged at half the customary price, and is repaid by the insurance company, while the



doctor cannot legally decline further treatment, and must continue to give his services which are gratuitous.

If the patient could pay he would decline because he would say he was insured and let the company pay. So it is safe to say that this class of work is now done for one-third to one-half what it was done for before beef and cabbage were cornered.

I have used these comparisons to show what can be done by organization and to negative the common expression that it would be impossible to get the medical profession together. It has always been a conundrum just why men who boast of intelligence, who pose as leaders of men in society, who are keen students, can not govern themselves as well as the mechanic or common laborer. Suppose I violate the adopted fee table of this society; what is the result? Nothing more than that I have labored for less than I might have received, hurt myself, lowered the profession, and robbed my professional brother.

Suppose a provisional wholesale house of this city would cut the price for a poor widow, with a sick child. What would happen? There is no danger of any thing happening. That is fixed, that is all arranged. If the widow gets provisions she must pay for them or be blacklisted. Suppose the truckster should retail. Do you suppose he could find a market for his produce?

Not so with us. A few days ago a doctor made arrangements to operate for a \$45 fee and was underbid by a member of this society, who charged \$25. Another member of this society contracted to perform a herniotomy for \$100 and deferred the operation until the money was ready, when another member of this society did the work for \$50. Have we not the same ability, as much brain and sense as commercial men, for our own interests and protection?

This argument may be met by the claim of charity and refuted by asking who is suffering most, the hungry, the unclothed, or the sick? If to doctors belong the charge of caring for the sick, can you point to an individual so poor as not to have a doctor? What a wail of complaint should we refuse!

Is there any noise made against those who refuse food and clothing and are they censured for not supplying the needy? The daily papers have for weeks been notifying us to pay our coal bills, or we will not get more coal. That's business. Suppose doctors would take a similar stand, would that be business? Is it not true that we have made provision for the needy poor by delegating two of our profession for such emergencies?

Do not for a moment doubt but that there is a business understanding between the retail stores, and there should be. It is essential to a continuous and profitable business. Have you not noted the uniformity of prices? Have you not also noted the steady advance and promptness of collections? Do you realize that doctors are working for less than they were receiving twenty years ago?



Some may deny this; but look it up. Those of us who have seen twenty years of service, know that house rent, office rent, expense of conducting practice, has doubled in twenty years.

If business so intricate as commercial with all its lines can be brought under control and be regulated so as to increase profit in cost of production and sale, what then do you think of the medical business under present conditions? Do you know that we are the only class of business men on the face of the earth which is cutting fees?

What do you think of the livery-man charging more than the doctor for making a call? What do you think of the plumbers of this city who are receiving nine dollars a day and one half-day holiday every week? \$263 each month, over \$3,000 per year. No night work, no office, no irregular hours. Do you realize that many of us are not making wages as good as this and work seven days a week, subject to call any time day or night! The charity of our profession is abused and misdirected. It is too often of the kind reacting on us, to our harm. You can find no other trade or calling that is trying to lessen its output or destroying its livelihood. I have looked in vain for a nurse from any of our manufacturers telling me how to escape buying their wares. There is no nurse from the grocery organization going about telling the housewife that vegetables are so cheap outside of this city that it does not pay to send them to the market, and if there was such an attempt how long would the grocerymen let such a thing exist?

Now, why should this not be, for if it is right for one class it should be right for all. Let the missionary spirit prevail everywhere, not only a tubercular nurse but a pneumonic nurse, a surgical nurse, a genito-urinary nurse and an obstetrical nurse. Let each of these carry some business cards directing the sick to their favorite physician. Now, when we apply this in its broad sense, it sounds ridiculous; and yet am I not right?

How many mechanics are there in this city out of employment? Try to employ one and they are all busy. This is a great age, a prosperous year. None were more productive than 1910. During this year of great activity in commerce and industry every workman was busy, increasing wages, better business, bigger dinners, better clothes, prosperity unbounded. Compared with this how many idle hours, waiting for patients; how many days have you had this fall when you did not make expenses? If it does not come now when will it come? When may you hope for a change? You are deceiving yourself by thinking a better day will come under the present circumstances. You have been deluded into thinking medicine a great lucrative field. You have been deceived, and yet you tell us you are doing well, busy all the time—getting rich, and yet since the history of this city began, not one doctor has been able to retire as the result of the practice of medicine.

When the prophets first foretold the benefits of united labor, of happy homes and blessings of higher wages, people hung their heads in doubt, but such is the change that the plumber gets better wages by stopping a leak than we do. The weekly wages of the hod carrier for this week is

more coin in his pocket than some of us received. We are twenty years behind in our business methods.

The mechanic has for years been *limiting* the number of *graduates* in his school, by limiting the number of apprentices and increasing the period of time of the apprenticeship, and yet they have received more praise than censure, for doing this. Do we not say the life of the mechanician has vastly improved? Is this not a lesson from which we can learn something?

On the other hand we are increasing the number of graduates, lessening the amount of sickness, and are now reaping our folly. This may seem pessimistic but it's the truth. I am dealing with the business side of life. Suppose it was within our power to foster free dispensaries, free clinics, charity everywhere, until disease became so rare that doctors would have nothing to do. Suppose we killed the goose that laid the golden egg. In other words, who pays us for such laudable charity, who pays us for prophylactic measures? Only the good of knowing you killed your business and mine. That's not the moving spirit, nor the intention of this mode of advertising. It is one method of increasing business and belongs in the same class with bankrupt stocks and selling out at cost. It's a sale of fire goods at wholesale prices, with the middlemen cut out. What's the difference between such methods of conducting business and the quack who treats free? Why does the advertiser give free examination? You know why, and what's the difference between them?

Peddlers, street hawkers, and fire sales interfere with the retail merchants. Free medicine shows interfere with the retail druggist, so that our City Code contains a stiff license fee, meant to be prohibitive and also to help the retailer.

Dispensaries and free clinics only hurt the business of doctors not connected with the show. So dub it with charity, with a chunk of religion, and nobody will see the point until they become a public nuisance, a curse to the profession, which, like an obnoxious weed, can not be killed out, so long as we have such advertisers in our profession.

The press is now giving a friendly ear to our profession. Mystery and ignorance of medicine are giving way to fundamental facts written by able men for the dailies and magazines.

Jealousy and backbiting will change to a united profession. Soon we will be represented in the cabinet of national affairs. United we can teach the people the wisdom of obeying our teachings and granting to us better protection. Then all together we can legislate for our common good. Then we can say to our representatives, when voting on medical subjects (just as organized labor demands anti-election pledges) to vote intelligently and right: to represent the doctor squarely on medical subjects. Then will it be possible to go to our representatives and say: "you voted for obnoxious bills"—just as Gorman and Butts did at the last General Assembly—and are now asking that your and my vote return them, to slap us in the face again. Gentlemen, remember these facts when voting. We have a vote and influence.

The whole trouble in medicine is in our own ranks. From time to time the subject of increased fees has been before us and here it is up again. Some of you are increasing your charges. Some say you are, but are not. Suppose you adopt the fee table as endorsed by this society, and attempt to follow it, and I talk for and urge you to stick to it, and then I quietly take your business by giving cut rates. That very thing is going on in this society. It looks like a scheme whereby those of you who are honorable, wait and hope for a square deal, while I am playing traitor to my own organization. Show me one case of this kind in organized commercial or industrial life. Why should we be the only exception and how can we succeed when the universal verdict of labor and capital is emphatic that it is by combination that hope of success may be had.

When a patient calls a doctor he does not consider who is the cheapest but who is best. The charge is an after consideration for the courts to settle six months or a year after recovery of the sick.

Each of us owes to his brother doctor, if not to himself, the duty of maintaining the dignity of the profession, which can be lowered no more quickly than by being cheap.

If you charge \$2 for making an ordinary call, and I take your patient by charging \$1.50, you can only get your patient back by charging \$1. Then I begin to talk about you and you about me, until we have hurt each other, taught the patient that we are both cheap, spiteful, jealous creatures and they become disgusted with both of us and employ another physician. It is not our charity the sick are calling for. It is our ability to cure.

I have always believed the cheap doctor a conscientious man, and when he underbids me I say each doctor surely knows what his services are worth and if one charges more than the other it is because he thinks the job is worth it.

I believe in advertising and so do you. Some of us advertise one way and some another. We must blow our own horn. I will not blow yours, you will not blow mine; but let's tune up, blow together in unison and make a band with more than a local renown. Stop this discord, blow your part and I mine, blow so that people will applaud, and blow so well that competition will not be in it. Blow so perfectly that the sick will find that medicine has charms to soothe, etc.

Free dispensaries and free treatment sound good to the layman, but no doctor will encourage such unless the advertisement brings some gain. Free treatment is a feeler for reaching the sick. It's the place to increase acquaintance with the afflicted.

In every city where free treatment has been introduced, they are now trying to stop it. The universal desire is for its abolishment. It is to be hoped that the members of this society will see the error of introducing this kind of practice in this city and stop it. It is certainly one of the advertising features that must be discouraged.

Why not introduce free plumbing for the needy poor. Free carpentry where we could get help for the asking. Are not these ludicrous ques-



tions? No more so than that we should give time for nothing. No more demanded than other necessities. Our course is such that our income is gradually lessening. Sanitation and hygiene have greatly lessened disease. Epidemics are a thing of the past. As time goes on the doctor will be in less demand. The sick are made to recover in shorter periods of time than formerly. With progress of time we prescribe less medicine. The layman asks and receives our advice until he can many times dispense with our services; all brought about by ourselves, our free clinics, sanitation and hygiene; and what is there to take the place of this loss, which has come to stay. We are today applying old ideas to new conditions. Twenty years ago not one-half was expected that is now demanded to make a proper diagnosis. There was more sickness than there is to-day, fewer doctors and better fees than there are now.

Here is a patient who has taken to idolatry, to the She God who gave life to the book called "Science and Health." There are those who have displaced bones and nerves and get cured without reduction, all of whom pay larger fees to these prophets of deception than one charged by doctors who endeavor to practice sane medicine.

It is amusing to see the idolatrous teacher charging \$2 per call, without training, without knowledge of the normal, much less any knowledge of disease, treating matter which does not exist, and we professors of the true faith asking \$1.50. Do you think any of our patients have gone over to these cults because of our charges? Not at all. It's because of our own bickering, because of our lack of attention to small details, because of lack of unity. It's our looseness that leaves a place, when the fickle needs tickling, when the neurasthenic wants coddling. There are three classes: the well, the sick and the intermediate who *thinks* he is sick. We must recognize this division and we have here to awaken to the new condition.

Medicine is largely a one man power. You must represent yourself. We can not increase our output, for there never yet has been a day and night of more than 24 hours. But we can be made to understand that what is good for you is good for me. If you use treachery to get my patient and I get him back by using your methods of getting business, we surely can realize that neither of us can hold this patient so long as either of us has enough baseness to get business. If I am blinded to my own good, help me to see myself, and when enlightened it is reasonable that I will no longer be in error.

I am not advocating a fixed fee table at so much per hour or call. I am trying to see further than organized labor. Let every man have just recompense. Some of us excel others. Your time may be worth more than mine is to me. A calico doctor should be cheaper than a silk doctor. Let each know his worth and let each go beyond the demand of union labor by none being so dishonest as to charge more than he is worth. If I choose to make night calls at day rates, convince me of my error. Help me to reason that I could have had more for my services, and still hold the gratitude of my patient. For my persistent blindness, let me have



as my reward, a life of hard labor, known as a man poorly paid with a dejected family.

I believe in strikes, but not in tying up the profession because my brother was not paid for his labor, but strike in defense of his honor and ability. I will strike for a part of his burden when called by him to do so. I admire the doctor who can take my patient from me because of his wisdom, because of his able diagnostic ability and skill. It is then I realize I have more to learn, more ability to acquire. It makes me see myself. But should a doctor with such ability make a fee not in comparison with his ability? I would reason that I had overestimated his worth, and the patient would naturally arrive at the same conclusion. I would think the consultant was bidding for my patient and the patient would wonder why was the doctor so cheap.

Why does the medical profession boast of being overworked; no time to eat or sleep; horses are too slow; compelled to use an auto? Why do we deceive by telling each other of making twenty calls a day and three confinements during the night? What delusion is this that pictures an office with a long line of waiting patients? Is this not the exception? If it were true and you were making what you told me, you would have some evidence of it; some property to show, lift mortgages and be free of debt.

The down-trodden farmer, the retired capitalist, all ask our reduction for labor bestowed upon them for we have educated the people to believe we have a mecca, a real bonanza for making money, that money is a secondary consideration, that we do not need it, for we are making money so fast that it is a pleasure to make a reduction for cash, while in truth you need the cash so badly that you are forced to do something to get it quick.

It is this kind of hot air that is crowding the profession. The baker has heard it and is saving enough money to join our ranks. Men in all callings of life look at us with a desire to some day be able to be a doctor, live in ease and luxury, to have an easy time, and make money.

Our profession has done noble work in looking to the needs and ills of fellow man, but has taken little heed of self. Now, let's be considerate of ourselves. Learn a lesson from organized labor which teaches that to labor belong the spoils.

There is no charity in this, we must look further than such teaching and organize for the good of those who may become our charges. Do not fret away our substance in pretence of greatness, but remember that the well paid doctor has money for books, aids to diagnosis and an incentive to aid the afflicted. We would not say as does the labor union: "To us belong the proceeds of labor"; but, "give us proper recompense, that we may be prepared to minister to the sick." Can you do this under present conditions; can you equip your office modernly? Why have you not so much as a reasonably equipped office? Because you cannot afford it. Why are you using strict economy? It is because you are apeing a professional brother. He wears good clothes, looks progressive, and you

try to look like him. He is apeing you and wears good clothes because you do. Neither can afford it.

If I have a poor business and you are busy, run nearly to death doing laparotomies and cutting to beat thunder and every doctor I talk to is busy, I get blue, I cannot understand it but trust a change will come and I keep on spending the little my wife inherited. I know it's a lie, but I tell my brother I am doing all right, better than I expected. I delude him and he lied to me and we become confidential and in a moment of confidence he said he was not making a cent and then I took new courage and realized that I was not alone.

Why should members of this society set themselves on a high pedestal and tell the laity that there are only two or three doctors in this city who are sufficiently qualified for them to consult with? What is wrong with the doctor when he ignores the meetings of this society because he says there is nothing here he can learn? What's wrong when he sneers at us, and shakes his head when our name is mentioned. The same thing exists in the mind of the fractious colt when hitched up with the old mare, from which the colt is expected to learn the duties of a well broken horse. The colt is excited, champing its bit, sweating, and thinks the old mare ignorant of her duty because she don't get out of place.

When I need help, let me turn to my brother, speak for him words of confidence to my patient. Teach the people that this society membership can give them good service. Tell them that we have here good surgeons, good specialists and talk as if you had good sense. If I can not get a good fee, why should it not be better to help you get it than to give it to Chicago. If I am behind the times and don't know much, then come to our meeting and teach me. If then I am convinced you know it all, I surely shall call you, when needed.

Here, in this society, is the place for discussing our deportment in the practice of medicine. Just as long as medicine is progressive, so long will there be a difference of opinion between the progressives and those who stand still. This organization should be and is our post-graduate school. Prepare for and fix right here those things that lessen our personal loss in practice. You and I are integral parts of the medical decorum of this city. I can not destroy your medical career without blacking my own.

Why should not your fellowship in this society be as dear and revered as the unionist card. If the unionist card was ignored and members treated as we do each other, it would be despised and rejected. This want of harmony, too much jealousy, stills the ambition and blasts the hope of a McDowell, Gross or Sims rising up among us. If you doubt it let this society endorse and praise the work of the earnest doctor and see how quick the news is spread, while honor and prestige would make for us one whom it would be our pleasure to say had sat among us.

To be such you must merit our confidence. Not by egotism and self conceit, but as a teacher imparting wisdom, a leader; be progressive and an independent thinker. When you find it is impossible to know it all and learn that some can even learn sermons from running brooks, or be

confounded by the simplest atom; that your spurned doctor might be your guide; then why not ask him, thank him, give him credit for possibly the one talent that was needed. That's brotherly. That's professional ethics, pure and simple.

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## APPENDICITIS FROM A MEDICAL STANDPOINT \*

E. E. SARGENT, M.D.

LE ROY, ILL.

The subject assigned to me for discussion is undoubtedly a very important one notwithstanding the fact that many think that anything said or written at the present day pertaining to appendicitis is rather of the common order. I wish to say in the beginning, I am not competent to present anything of an ultra scientific nature, and what few ideas I have formed and hurriedly gathered together will not be startling.

When the post-mortem room discloses the fact that one out of every three to ten, as variously stated, has some pathologic lesion, denoting appendiceal inflammation at some time, it certainly is deserving of our consideration, and we cannot know the subject too well. Definite lines of procedure in the management of appendicitis have been laid out for us by eminent men in the profession, men of vast experience, whose advice is valuable and whose words should be heeded.

Unfortunately this advice is not uniformly followed by the profession and the untimely results in many of these cases only serve too strongly to impress us with this truth. If you have settled this matter satisfactorily to yourself and have decided in your own mind how to manage appendicitis from a medical standpoint, I can truly say you have accomplished more than I. In my country practice I have had perhaps an average number of these cases to care for and I can freely confess to you that I have often been at a loss to know what course to pursue.

Appendicitis is a very common complaint; you and I meet it in its varied forms almost every day, and yet the case you have to-day differs from the one of yesterday. Your diagnosis of probable appendicitis may be right in both cases, yet what you successfully did for the one yesterday may prove of no avail for the one to-day.

Patient A, with the cardinal symptoms of pain, tenderness, rigidity, fever and vomiting, may soon be on the road to recovery by a thorough cleansing of the bowel with enemas, an ice coil to the affected side and absolute quiet.

Patient B, with symptoms of about the same degree of severity, and under the same treatment, will probably pass to that stage where he must be viewed from a surgical rather than a medical standpoint.

Only a few years ago we heard medical teachers and writers say they could treat successfully 80 per cent. of appendicitis cases by medical means: to-day we know better than that. You have carried your patient

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\* Read before the McLean County Medical Society, November, 1910.

along to the end of the second or beginning of the third day with a fair degree of success, and you have begun to think this is one of the 80 per cent. *sure*, when on your next visit you find the patient more restless, pain becoming more severe, fever somewhat higher, McBurney point more tender, and then it is up to you to call in your surgical friend and have him tell you and the anxious family the depressing fact that you waited one day too long. I have had this experience. So have you, my medical brother.

On the other hand, concerning the case you had last week, perhaps you were not called in until the third or fourth day of the attack. Immediately on making your diagnosis of appendicitis you ask that your surgical friend see the case. He finds the patient not only with the cardinal symptoms of acute appendicitis but just getting over a severe chill, and the fever at 103 or 104. What does he do? Nine times out of ten it is a safe guess to say he would advise an operation, with what results we are only too familiar. I have had this experience also. So have some of you.

In the first case the medical man had possession too long; in the second case the surgeon took possession too soon. If these symptoms could be more clearly studied, the diagnosis more clearly made, the particular stage more definitely outlined, then the dividing line between medical and surgical cases would be made more accurate, and if we then acted as the symptoms pointed the way, how much better the end results would be.

Appendicitis from a medical standpoint I regard, personally, as having a very limited field; absolute diagnosis having been once made, the management thereafter is largely surgical. Conservation of natural resources is a popular subject to-day, but conservation of diseased appendiceal tissue does not meet with the unqualified approval of thoughtful medical men. Between the radicals, led by Deaver of Philadelphia, who cuts everything including inflamed appendix, localized abscess and general peritonitis; and the very conservative, who were very slow to have any cutting done, there was a wide field of difference.

This was the condition of affairs when in 1901 A. J. Ochsner entered the arena, bearing an olive branch and with this a message to the medical profession. This message was: "Wash out the stomach; give absolutely no cathartics and no food of any kind by mouth; use enemas for relieving the bowel" and make arrangements for a good surgeon.

This was nine years ago and from a medical standpoint we have not had much, if anything, better since. Whether or not laxatives should be given is a question not wholly settled. Many men of experience hesitate to pass up this mode of action. We have all seen patients with iliac pain, emesis, constipation, and a boggy tumor in the appendiceal region, readily clear up by the use of a good cathartic.

Is there room, therefore, for criticism when men get satisfactory results from treatment like this? The point arises, however, with such symptoms as mentioned, are they really undoubted cases of appendicitis, or are they cases of typhlitis only? This brings up the question, as I



mentioned before, and which I wish to emphasize if possible, for us to be more absolute, more definite, in our diagnosis.

If we can satisfy ourselves that the trouble we are dealing with is confined to the iliac region alone, then with all probability we can exclude all disorders of the gall-bladder and gall-ducts, also gastric and duodenal ulcers. If the appendix is not abnormally placed, or is not unusually long, with its tip adherent to some other organ, then we can, by means of rectal and vaginal examination, differentiate from the disorders of the uterus and adnexa.

Satisfied that the trouble is located in the appendix, let us recognize catarrhal appendicitis, without marked local symptoms; the acute form, with marked local symptoms; the chronic form, with its varied train of disorders, such as dyspepsia, anemia, liver affections and enterocolitis; and lastly, the most treacherous form of all, gangrenous appendicitis, in which the acute symptoms have all subsided within a few days, and yet the condition is accompanied by abscess formation.

The diagnosis having been settled, there seems to be no question about the advisability of an early operation; that all localized abscesses should be opened; that drainage should be established for general peritonitis; and that all appendices, tending to recurrent attacks of inflammation, should be removed.

But the rub comes in the management of those cases of about the fourth or fifth day, where they have been progressively growing worse, where the lymph agglutination of mesentery and intestines is forming the wall of the abscess cavity. "This layer of lymph, covering the surface of the intestine and omentum, offers a line of defense and serves as a barrier to the passage of poisonous bacilli into the lymphatics and the blood streams of the surrounding viscera." If this barrier can be preserved till about ten days or two weeks, then the temperature will fall, the pulse becomes slower and better, and your patient has become protected.

I believe more mistakes have been made and continue to be made from day to day in handling this stage than all others combined. I am convinced that if all surgeons would agree that this is not the time to interfere, and absolutely refuse to operate at this stage, except in rare cases, a far better understanding of this disease would soon be established, and no one can deny but that the mortality rate would be reduced.

We physicians are sometimes criticized for our slow methods of diagnosis and for bringing into the hospital cases reeking with pus. I will admit that such a condition is unfortunate but I believe we are improving in this regard and now not so many cases of this stage can be chalked up against us, as of former years. We may be a little dilatory sometimes in not rushing these patients off to the hospital in the *early* stage, but on the other hand, the surgeon into whose care he is given, should not feel in duty bound to operate on *every* case on admission, when it is in the *pus-forming* stage.

In this day and age, when embryo surgeons are springing up in every city block; when competition is running at high stage as to who can add

the greater number of major operations to his annual list; when it is customary to have a reprint of your surgical paper circulated among prospective friends; I say when all this is taking place, it behooves a candidate for the operating-room to look well as to his surgical adviser.

I am a firm believer in surgical means for the relief of a properly diagnosed case of appendicitis, but I protest against this indiscriminate cutting of every case that occurs, irrespective of the stage and of the condition of the patient.

I suspect all of us, in times past, have been guilty of administering a little opium for the acute pain in a particularly sensitive patient, yet we know its use is not advised, for even a careful observer, who is ever alert as to the state of the pulse, temperature and general make-up of his patient, may be misled and doubt created as to the progressive character of the case.

If it is so severe as to demand the use of the opiate in the first stage, it certainly needs an operation. Poultices of all kinds are mentioned only to be condemned. Put the patient to bed; keep him absolutely quiet; employ Ochsner's method exclusively, or use the ice-pack to the affected side; use a laxative if you think best, and your case will have received good treatment from a medical standpoint, whether he goes later to the operating-room or not.

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## SYPHILITIC EVIDENCES IN THE RECTUM\*

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CHICAGO

This paper does not embrace all of the forms in which syphilis is evidenced by rectal lesions, but only those commoner changes which are so easily mistaken for other diseases. Tumors of various sizes and ulcers of different degrees of depth when seen at the anus or within the rectum are often of confusing etiology particularly to those who think hemorrhoids, irritable ulcer and cancer are the only rectal diseases.

Some time ago a young woman with a painful ulcer at the anus came to me. She had suffered with constipation for several years and had frequently used an enema. Her physician had treated the ulcer with local applications and later by operation, but only made conditions worse. I diagnosed a phagadenic chancre which the subsequent history proved was correct. We afterward found how this young woman was probably accidentally infected by using a borrowed fountain syringe. There was nothing exceptional in her trouble except the uncommon location of the initial sore and I mention it here because the rectal expression of syphilis is not a frequent finding and yet it occurs sufficiently often to mislead because the early ulcers may be considered simple or irritable ulcers and the later ones tuberculous or cancerous. Syphilitic new formations are frequently considered malignant. I also speak of this patient because

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\* Read before the Chicago Medical Society, Dec. 21, 1910.

chancres within the rectum or about the anus are sometimes said to be positive evidences of unnatural intercourse.

I hope by this paper to show that the same lesions, chancres, rashes, ulcers and new formations may be found here as occur in the same histologic structures in other parts of the body, but their clinical picture is modified by conditions peculiar to the rectum, because of the superimposed infection by intestinal microorganisms, the constant abrasion of the surfaces by the feces and the irritation of the intestinal secretions.

Chancres within the rectum are rarely seen because they occasion little discomfort, only a slight discharge, and disappear spontaneously. The ulcer when seen has the usual chancre appearance; a round indurated ulcer with sharp raised edges slightly undermined.

Chancre at the anus is somewhat more frequently seen than that within the rectum. Occurring in an anal fold it simulates irritable ulcer. The chancre seen in the young woman referred to above was quite as painful as an irritable ulcer. This statement is made notwithstanding some authors say that anal chancres are painless. Anal chancres, like other ulcerations in this region, vary considerably in their degree of pain because occurring in different types of individuals, some of whom are more sensitive to pain than others. Also the degree of pain of any anal ulcer depends upon the depth of the wound. If an ulcer involve only the mucous membrane it will probably not be painful, but if it go through the mucosa and especially if it involve the musculature either by ulceration or by the fixative leukocytosis about the ulcer it is certain to be painful. If the induration surrounds the muscle fibers it immobilizes them and by squeezing the fine nerve fibers produces the same sensation as an exposed filament. Each time the stool passes it disturbs this mass as does also each action of the sufferer in sitting down, rising up, walking, sneezing or coughing. Some time ago I saw a patient with a beginning chancre in the anal folds. At this time it was painless. Later it became phagadenic and had a wide infiltration which immobilized a large part of the sphincter. At that time it was very painful.

Chancres here run the same course as chancres elsewhere and leave small bluish white scars which are later very difficult to find. For this reason the diagnosis cannot be made afterwards.

*Secondaries.*—In the secondary stage of syphilis we find two forms of ulcerations that are confusing:

1. The mucous patch.

2. The large ragged ulcer a sequence of necrosis produced by the stangulation of circulation in the tissue surrounding the syphilides.

After the second week of the infection there is sometimes found at the muco-cutaneous junction an erythema which might be mistaken for an acute eczema. In a couple of days little vesicles appear which break down and leave red or gray ulcers which are irregular in outline and upon an indurated base. They may be single or multiple. If multiple even though they are close together each ulcer preserves its own form. The edges are not undermined and the intervening tissue remains healthy. When the vesicles rupture there is a little thin discharge which

keeps the parts wet and macerated. As the ulcers enlarge they become saucer shaped and are termed *plaque porcelainique*. The discharge and moisture of the opposed buttock produces an hypertrophy and before the mucous patches are healed there develops broad flat warts, the condylomata lata. This condition, although resulting from a syphilitic lesion, is not itself syphilitic and is not amenable to antisymphilitic treatment.

Mucous patches within the rectum are very rare. Molliere (Tuttle) has reported only one case.

## 2. Ulcerations secondary to other syphilides.

When the mucous patch appears there also develops the surrounding congestion which interferes with the local circulation and sometimes the tissue sloughs away. This may happen with any other syphilitic eruption about these parts, *i. e.*, papular, macular or pustular. These resulting ulcers are gangrenous gray in color, irregular in outline and ooze blood on slight touch.

Within the rectum the cellular infiltration and induration produce an edema of the mucous membrane. This swelling increases friction and necrosis is produced usually in several places. The ulcers are regular in form, circular in outline with clear sharp edges and usually the whole trouble is confined to the mucous membrane. If seen early they are amenable to treatment and may heal with very little resulting scar.

As I have mentioned above, these ulcers cause few symptoms and if untreated they tend to enlarge both on the surface and in depth until they may extend through the deeper coats of the rectum and even into the pelvic structures. If they are on the anterior wall of the bowel the peritoneum may be opened and infected. If the patient also suffers from some other systemic disorder such as nephritis, tuberculosis or anemia the ulcer may spread out almost unlimitedly. Kelsey, quoted by Tuttle, reported a case where the whole rectum was circled. The favorite location for these ulcers is about one inch above the sphincter, but they are found less frequently higher up, even to the colon.

The ulcers are sluggish in appearance with sodden surrounding tissues and are usually chronic although not always. Occasionally one is phagadenic for the reasons already assigned. These ulcers are liable to be confounded with tuberculous ulcers. Paget in his classical differentiation<sup>1</sup> says they have sharp, well-defined edges with level base. This is in contrast to the ragged, undermined and indurated edges of tuberculosis. If several of these ulcers coalesce they appear as one large ulcer or as a lobulated ulcer, but they do not encircle the bowel as does the tuberculous. On the other hand if tuberculosis has existed long enough to produce a number of ulcers in or about the rectum or a large excavating ulcer we will find tuberculosis in other organs. There is also considerable purulent discharge from the tuberculous ulcer. The syphilitic ulceration produces a thickened leathery feel to the bowel, but tuberculosis does not affect the elasticity of the bowel.

1. Med. Times and Gazette, 1865.



At the anus these secondary ulcers begin as small cracks or fissures in the anal folds. Their edges are somewhat raised but there is no surrounding induration. Where only one of these ulcers occurs it is often very difficult to differentiate it from the simple irritable ulcer, but of course the treatment of the syphilitic ulcer is worthless for the irritable fissure and vice versa.

*Tertiary Changes in the Rectum.*—There are three tertiary syphilitic changes in the rectum that are likely to be mistaken for other diseased conditions, viz:

1. Gumma.
2. Fibrous infiltration of the rectal coats.
3. Syphilitic stricture of the rectum.

Gummas occur in connective tissue anywhere and the rectum shows no peculiarities in this respect. They may be single or multiple. The gummatous tumor is a soft, elastic mass beneath the mucosa. At first they are free between the mucous and muscular coat, but later they may be attached to either or both. They are painless, usually about the size of an enlarged lymph gland, but may attain enormous size. By digital examination the feel of the mass somewhat resembles that obtained when palpating a uterus containing fibroids. These masses create no area of infiltration about them, but give a nodular feel not unlike cancer and the mass is often movable in the submucous connective tissue just as are the early cancer growths. They do not abscess or occur in chains and are thus differentiated from diseased lymph glands. When a gumma is incised the wound is prone to remain open.

Several years ago I saw a woman with what I supposed was a perirectal abscess. The patient was hysterical and a rectal examination was impossible. The mass was in the left labium and perineum. The whole surrounding tissue was red and swollen (a condition I afterward decided came from the applications). I incised the mass thinking it was an abscess, but of course, I found no pus. I then excised the mass and sewed up the wound, but it did not heal. Seeing that the wound was not uniting excited my curiosity, the potassium iodid was pushed and the wound healed kindly.

Fournier<sup>2</sup> reported a fibrous infiltration of the rectal wall which he said was not syphilitic but rather parasymphilitic. A hyperplastic proctitis similar to the scleroses seen in the kidneys and liver. Some time ago I saw a case of this sort and found it very interesting. A woman, aged 42 years, married, two children, no history of syphilis. About three years ago she noticed a hardness of the perineal body. The vagina seemed stiff and hard. Later she consulted her physician who gave local treatment without success. Later she had been under the care of several physicians. When I saw her she suffered from obstinate constipation which was gradually getting worse and a tentative diagnosis of carcinoma had been made. On examination the anus was found in its normal position. The skin of the perineum and about the anus was rough and

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2. *Lesions Tertiaires de l'Anus and Rectum*, Paris, 1875.

wrinkled, dry and thickened, but not sensitive. On attempting a digital examination I found the rectal wall hard, rough and tight about the finger, making introduction very painful. The narrow cylindrical three-quarter inch rectoscope was introduced with difficulty and the bivalve could not be satisfactorily opened. The hardness and fullness of the tissues was greatest at the anus and shaded away for a distance of five inches within the rectum. The examination was painful and although it stretched the tissues considerably it did not cause any bleeding. I removed three pieces for microscopical examination and this clipping caused very slight bleeding which was easily and promptly checked. These sections showed nothing but fibrous connective tissue.

*Syphilitic Stricture of the Rectum.*—Just how frequently syphilis causes stricture of the rectum is a mooted question. Some authors claim that all non-malignant strictures are syphilitic while others are equally positive that strictures result only from ulcerative changes and that regardless of its type or etiology. I have in my work found strictures that were certainly not malignant and where I could not get a history of syphilis or where any response was obtained to syphilitic treatment. At any rate we do find that syphilitic stricture may follow any syphilitic ulcer chancre, secondary ulcer or broken down gumma and that it has certain peculiar characteristics. Syphilitic ulcers are inclined to follow the course of the lymph and blood vessels and as that direction in the bowel is lengthwise the contracted portion is tubular instead of sharply annular as we find it in the inflammatory stricture. The rectal wall is also stiff, rough and leathery instead of nodular like that of cancer. Of course once ulceration occurs and septic infection is added the picture is so confused that a microscopic examination of a piece of the tissue may be necessary for diagnosis. Just in passing I wish to say that the chancreoid, while not syphilitic, is a close cousin and frequently produces a very serious form of stricture.

*Hereditary Syphilis.*—Hereditary syphilis frequently appears in the rectum or anus during infancy. The syphilitic anal fissures are quite frequently seen. They may at first be mistaken for chafing due to carelessness of the nurse, but instead of healing kindly under treatment they extend by ulceration and are bathed in a fetid discharge. Usually, however, they respond nicely under antisyphilitic treatment.

438 East Forty-Sixth Street.

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## SOME CLINICAL NOTES

HOWARD CRUTCHER, M.D.

ROSWELL, NEW MEXICO

*Pyloric Stenosis in a Tubercular Subject.*—M., railroad conductor, aged 35 years, of excellent personal history, while suffering from all the symptoms of progressive general tuberculosis, began to suffer from undoubted signs of pyloric stenosis. The condition became so threatening that actual starvation was imminent. Dr. C. L. Parsons called me to see the patient September 21, and two days

later pyloroplasty was performed at St. Mary's Hospital. The patient bore the anesthetic poorly at first, but his condition at the close of a quick operation was remarkably good. Relief of the gastric distress was almost immediate. The patient died December 11, 1910. The autopsy was attended by Drs. D. H. Galloway, W. W. Phillips, C. L. Parsons and the writer, confirming the diagnosis of general tuberculosis and demonstrating a perfect result from the operation on the pylorus. The operation was necessarily attended with serious risk, but I am glad that it was performed, as it gave the patient immense relief during the few remaining months of his life and was fully worth the risk.

*Spontaneous Healing of an Old Vesico-Vaginal Fistula.*—A woman, aged 68 years, mother of several grown children, was operated on several years ago for vesico-vaginal fistula, the obliging operator leaving behind two silk-worm gut stitches, around which a large calculus formed. I removed the stone and the stitches in April, 1909, and advised that another operation would be necessary to close the fistula. To my surprise the opening closed about a year after my operation without further operative measures of any kind. Considering the persistency of such lesions, I regard the result as worth reporting.

#### DEATH FROM VAGINAL HYSTERECTOMY

In THE ILLINOIS MEDICAL JOURNAL for September, 1910, in an article concerning vaginal hysterectomy, I made the statement that I had no death to record from the operation. I ought now to explain that the article was not published until several months after it was written, and in the meantime I did have a death, which it is only just to record. The uterus was the seat of cancer. I met with a mass of tissue where I was unable to control bleeding promptly and the loss of a few ounces of blood was enough to turn the scale against the patient. She died twelve hours after the application of the clamps. She was deeply cachectic, had "flooded" seriously for years, and I have no reason to think that another attempt might result more successfully. To those who are so strenuous in their condemnation of the clamp, I might say that no other means was possible in this case. Certainly a ligature would not have been practicable. The more I perform vaginal hysterectomy the easier does it seem, and yet the more conscious I am of the dangerous possibilities that confront the operator on every hand. Every case must be considered a law unto itself, and whilst precedent and past experience are most valuable, it should be borne in mind that it is overcoming variations and meeting promptly new conditions that crown our efforts with success.

*Death from Chloroform.*—In December, 1909, Drs. Galloway, Phillips and I placed a man aged 26 years on the operating table at St. Mary's Hospital with the intention of performing an exploratory abdominal incision. A probable diagnosis of appendicitis had been given. The patient was a man of fine physical development. He was a very heavy drinker and but for the urgent nature of his symptoms we would have declined to operate. Dr. Phillips began the anesthetic with the utmost caution, but Dr. Galloway and I stood at the head of the patient, fearing some mishap, leaving the ordinary preparations to Sister Augusta. After inhaling about half a dram of the chloroform the patient stopped breathing. The most energetic and thoroughgoing measures for resuscitation were instituted at once, but after an hour we abandoned the case as hopeless.

It was hopeless on any account. The autopsy, held a few hours after death, revealed a condition within the abdomen that no amount of skill could have helped. There were coils of gangrenous intestine, knots of infected omentum, a



score of secondary abscesses in the mesentery, and complete disintegration of the appendix.

For several weeks the patient had been expectorating pus and there were strong suspicions that he had pulmonary tuberculosis, although the examinations revealed no conclusive evidence in the way of microscopic verification. The autopsy showed a fistula extending from the appendix through the diaphragm into the lungs, which throws a flood of light upon the whole situation. It is only fair to Dr. Galloway to state that the patient came into his hands only a few hours before the time set for the exploratory operation.

*Unusual Complication Following a Clean Operation for Appendicitis.*—In May, 1910, assisted by Drs. Galloway and Phillips, I operated on a girl aged 8 years for appendicitis. The whole procedure was clean from beginning to end. The patient appeared to do well for forty-eight hours, when she suddenly developed symptoms of acute infection, which alarmed me thoroughly. A most searching examination of the abdomen revealed no complication. The wound was in perfect condition. On examining the throat, however, all was easily explained. Pharyngitis was very extensive, involving the tonsils and the uvula. Something simulating sub-acute rheumatic arthritis developed, which gave the patient the greatest discomfort for nearly two weeks. Recovery was complete and the cure will be worth while to the little patient for the remainder of her life.

This case recalls another which occurred in Chicago fifteen years ago. I had made all preparations to operate on a man aged 48 years, for recurring appendicitis and called at his home at eight o'clock one morning for that purpose. Some puzzling symptoms having appeared, I decided to postpone operative measures, and observe further developments. The next day he was down with the most serious form of scarlet fever, from which he recovered slowly, and from the effects of which he died several months later. I was unable to follow the case fully, but I learned that death was due to acute Bright's disease. Unfortunately no autopsy was held, so the record lacks what is most essential, namely, pathologic confirmation.

*Probable Sarcoma, with Prompt Recurrence Following Operation.*—A sailor, aged 50 years, called to see me concerning a progressive swelling in the left groin. He was suffering from chronic tuberculosis and had a well-marked specific history. I told him that the growth was in all probability sarcoma, that its prompt removal was advisable, but that it would most probably return within a year. We appointed the next day for the operation, but before leaving the office he remarked, "Doctor, I have a very sore foot, which I wish you would look at." Examination of the sole of the left foot disclosed the presence of a large pigmented mole, now the seat of deep ulceration. The next morning at St. Mary's Hospital I removed the tumor from the groin and cut deeply into the sole of the foot in removing the ulcerative area. Recovery was unusually prompt, the patient saying to his friends that he was "better than ever in his life." Specimens of the tissues removed were sent to Dr. Robert Smart of Albuquerque for examination, who at first reported that they were sarcomatous, but a few days later on sent me word that they might be modified syphilitic growths. I showed Dr. Smart's letter to the patient and told him that he had better take up a course of thoroughgoing alterative treatment, which was pushed to the utmost point consistent with safety. I did not see the patient for several months, when he returned to Roswell with recurrent sarcoma in its most virulent form. It was impossible to count the growths in the scalp alone. The original growth in the sole of the foot had returned and the left groin was as bad as at first. The patient went to Hot Springs, Arkansas, but died within a few days after his arrival at that place. Whilst this patient was undoubtedly syphilitic and tubercular, I believe that he



fell a victim to sarcoma, in spite of the microscopic findings. Sarcoma to my mind is the master spirit of all pathologic changes. It is, so to speak, the major premise of all morbid developments.

The lesson in this case, as in all others, is to remove by a radical operation every morbid growth without the slightest possible delay. We have as surgeons to walk by the light we have, trusting the future to bring forth something better. In the light of the past every tumor should be attacked along proper surgical lines. If there were more early and complete operations there would be more cures and consequently more living testimonials to the value of modern surgery. The patient who trifles with a tumor is laying up a day of sad reckoning.

#### A REMARKABLE CASE OF MAMMARY CANCER

In 1898 I operated on a woman aged 50 years for carcinoma of the right mammary gland. The operation was confined to scraping away sloughing tissues, as the husband of the patient, although a physician, absolutely tied my hands, insisting that he "had always seen death follow operations on the breast!" Recurrence followed in the opposite axilla. Cancerous nodules appeared here and there, and my recollection is that I performed five or more operations at various times, covering a period of eight years, all of which time the patient appeared to be in perfect physical health. She was always in good spirits, seldom complained of serious pain, ate heartily, and went about as usual. I ought to say that the clinical picture was perfect and that the diagnosis of scirrhus was repeatedly confirmed by Dr. W. A. Evans of the Columbus Laboratories. After my removal from Chicago this patient was operated on several times, once, as I recall, by Dr. Charles Adams. She died in November, 1910, at St. Luke's Hospital, Chicago. That she should have been the victim of a serious cancer for about fifteen years seems to me so unusual that I feel that the case ought to be recorded. Several years ago I reported some of the features of this case in the columns of *American Medicine*, but as I have no records at hand I am unable to give the date of that publication.

*Large Myoma Disappearing After Cutting Off Blood Supply.*—Several years ago I reported a series of cases of inoperable myomata treated by the method of ligating the large vessels of the broad ligaments. The results were wholly satisfactory. Last September a colored woman, aged 40 years, married, never pregnant, consulted me for the relief of an enormous myoma. The growth extended from the pelvis to the diaphragm. I exposed the tumor through a long incision, removed several fibroids from the mass, tied off the broad ligaments, removed both ovaries and tubes, and closed the abdomen. For many days following the operation the patient ran several degrees of temperature and at one time developed a phlebitis of the left leg and thigh; but, four months after the operation, the growth is about one-half its former size and is steadily going down. Meantime the woman has returned to work and feels perfectly able to perform her usual duties.

Speaking of this case brings to the mind a pleasant day that I spent with the lamented Nicholas Senn in Milwaukee in the early days of June, 1905. Our conversation was private, but I wish it might have been heard

by the whole world of medicine. Professor Senn must have known something of the place he will always hold in the realm of surgery, for he spoke very candidly and without reserve. I recall perfectly one of his observations:

"Surgery will become dangerous whenever technique overshadows those underlying principles of the art. Cutting and sewing are not much, generally easy to do, but underlying principles are everything. There is too much desire to-day to show off this or that. Of course, we must always do the best we can in a mechanical way, but mechanics are not surgery."

The readers of *THE JOURNAL* will doubtless appreciate this little gem of wisdom from the lips of one of the most illustrious men who ever lived. One day, when our world is wiser than it is to-day, there will be more talk of Holmes, Gross, Senn, Pasteur, Koch, Behring, and less of some of the warriors of earth.

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—During the months of January and February of this year 13,458 physical examinations were made of children in the public schools. Of this number 5,350 were found to require treatment. The principal ailments, and to which parents were urged that immediate attention be given, were as follows:

Defective vision and other diseases of the eye, 1,940; bad teeth, 5,245; enlarged glands, 1,738; defective hearing, 174; defective nasal breathing, 563; adenoids, 599; tonsils, 2,550.

To properly appreciate the value to the child of medical school inspection when properly done it should be clearly understood that any one of the minor defects noted, and for which treatment was urged, mounts to a serious and positive handicap or hindicap to the child's educational development and progress. And this is leaving out of consideration entirely the serious physical harm that so often follows neglect to treat and correct in their incipency these ailments so common during the adolescent period.

It is to be hoped, therefore, that parents will show their appreciation of the Department's school work and at the same time give earnest evidence of their interest in the welfare of their children by giving prompt attention to the recommendations and advice of the medical school officers. Their work, though paid for out of the people's money, is altruistic in character. It simply means giving the child the best possible chance to equip itself for its future career, so that it is perfectly clear that to make this work of the highest possible value parents must realize to the fullest degree its importance and give to those entrusted with its performance in the schools their best support and cooperation.—*From Bulletin, Chicago Department of Health.*

# ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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APRIL, 1911

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## THE DECISION OF THE ILLINOIS SUPREME COURT ON THE ITINERANT VENDOR

Referring again to the question which was mentioned in our last issue, we quote the following from the *Journal of the National Association of Retail Druggists*, Chicago: "The itinerant vendor situation is most chaotic. The latest Illinois supreme court decision is responsible for this. This decision and an earlier decision of the same court known as the Noel decision give a strong hint as to what future legislation should be. In the one case the itinerant vendor section of the medical practice act was declared unconstitutional, because the goods sold were treated as merchandise and did not require, under the law, the use of any professional skill on the part of the seller; and, in the other case, the section of the pharmacy law which requires that all proprietary medicines be sold by registered pharmacists only was held unconstitutional on the same ground. It will be seen from this rule laid down by the court that if the people are to receive any protection whatever, our laws should provide that registered pharmacists, either individually or through their pharmacy board, should determine what proprietary remedies are safe and proper remedies to be sold to the people of the state, and what remedies should not be, thereby exercising their professional skill in behalf of the people for their protection."

While we have often felt called on to criticize the position of this druggists' journal on other things, we believe its position in this matter entirely correct.

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### THE CLAIRVOYANT CRIMINAL

Springfield, said to be one of the most fruitful towns for charlatans and frauds of all kinds, has just witnessed the successful "wonderworkings" of one of the most daring swindlers of the clairvoyant class. The tale is amusing enough to be interesting. This fellow called himself a "professor," of course, and worked the healing dodge together with prayer and magnetic accompaniments. He wore a Hindoo head dress and an oriental gown, was of handsome appearance, dignified carriage and went by the name of Hudson. He was in the city about three weeks and left some thousands of dollars to the good. His devotees were susceptible women although one coal black negro of nearly 70 years scraped together sixty-five good dollars for him on the promise that his youthful vigor would be restored. By various pretenses he secured most of the money from trusting women. They were told to appear on the morning of Friday, March 24, prepared for a surprise. They got the surprise. Some expected to find that the money left with him would be doubled; some to have their rheumatism cured; some to have purchasers willing to pay a high price for the property they were offering to sell. Four of the "dear ladies" swore out warrants, which apparently will never be served. Many others concealed their losses rather than be exposed. One of the victims, a Mrs. Grundy, is reported to have said: "The 'professor' certainly seemed to have some sort of electricity in him, and appeared to be full of it. Each time he held my hand I could just feel it flowing through me."

Another, Mrs. Hahn, is reported to have said: "I never saw such a rigamarole as that professor put on. He would take my hand and hold it to his ear and say: 'Dear woman, you've had lots of trouble. The evil influences and evil spirits are working against you. I'll make you happy yet, and you'll have happy days.' All the time he pretended he was in a trance and communicating with the spirits. I paid him one dollar for his first reading. Then he asked me several questions which I answered. One was very personal, but nothing wrong in it. I told him I was somewhat worried about my son, but he said, 'I'll fix it so your son will not give you any trouble on that account.' I told him that I would be very thankful if he would. Then he told me it would cost \$7. I told him the price was pretty high, but he held up to me the satisfaction I would derive from not worrying over the matter, and finally I consented. Then he prayed and called on the Holy Spirit and Christ. Why, God should have paralyzed him right then and there for the work he was doing and intended doing. He would stand up and pray and then sit down at my side and hold my right hand while I placed my left hand on the Bible. Then he told me to think of my son and went through some more movements. I told him I would like to sell some of my property, the house and two pieces on Fourteenth Street, between Madison and



Jefferson Streets. I told him I wanted \$2,600 for this place on Enos Avenue, and \$1,200 for either one of the other places. He told me he would be able to get me \$3,000 for this house and \$1,500 for either one of the other places. He told me then, 'Now just before you go to bed, think of your son and of the property, and then the last thing to think of before you go to sleep is me.' He wanted me to do this for three nights and then see him again. This first reading was about ten days ago, and he made no charge for either the second or third reading. The third time he asked me if I could get \$1,000, and I told him I thought I would be able to get that much. Then he said to do so by all means and take it home and place it under my pillow when I went to bed, and the evil spirits would flee. I then borrowed the money from my brother, yesterday morning. At 5:30 o'clock yesterday afternoon I went to his place and took the money with me. Then came the big test. He started out by sitting at my side, holding my right hand and with my other hand on the Bible. He went into one of his trances and talked of the moon and sun, and said he could then do something with the money. He lit a red fire, then passed it over my head, then stood over me. Then he prayed some more and went through some peculiar motions. Then he opened the Bible and told me to place the \$1,000 in it. Then he said: 'Can you leave the money with me?' to which I replied: 'I don't think that I can.' He had a powerful influence over me, however, it seemed, and I finally gave in and placed the money in the Bible. I told him I would be worrying about the money then, and he informed me that was just what he wanted, to have me worry about it, and I would be sure to have my mind on it. I left the money with him at about 5:30 o'clock last night and he told me to be sure and be back at 11 o'clock sharp this morning. He said that inside of twenty-four hours after I left him there would be a purchaser for the property, who would buy it at much bigger prices than I had asked for it."

The "magnetism" used is said to have been obtained through a wire leading to the professor's chair from the telephone. This stolen electric current was passed on to the victim, who completed the circuit.

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## SUPPLEMENT TO THE JOURNAL

For the first time in its history the Committee on Publication deemed it wise to issue a supplement to THE JOURNAL which was dated March 20, 1911. Owing to the fact that the hearing on the osteopathic bill was set for March 21, it was finally decided to delay the issue until after this hearing. Notwithstanding the short notice our members put up a vigorous opposition to this measure with the result that the Judiciary Committee of the House reported the bill out unfavorably by a vote of 14 to 5. As noted in the editorial of the supplement, this favorable result was largely due to the efforts which had been made before and since the election of 1910, and is a positive proof of the power of the Society when a proper effort is made. Up until this year our efforts had been spas-

modic and offensive measures were defeated only at the expense of much time and money. We trust the lesson will not be lost, and that each year in the future the candidates for the legislature from all parts of the state will be pledged to stand for what is best for the scientific profession as represented by the Illinois State Medical Society.

As was pointed out by us last year the osteopathic profession is largely dwindling to its final and complete extinction. There are certainly not more than 300 osteopaths of both sexes in the state, and fully 40 per cent. of this number are women. On the other hand, the number actively interested in the upholding of the high standard, numbers among the medical profession itself no less than 12,000, the dentists not less than 4,000, the druggists not less than 4,000, to say nothing of the overwhelming proportion of the citizens of the state who have no use for a fad like osteopathy. While we feel confident that osteopathy has had its day, yet it is not the less necessary for us to be active in asking the members of the General Assembly to stand firm for our rights.

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### MEDICAL HISTORY OF ILLINOIS

This month we take pleasure in producing a chapter of Medical History of Illinois from the facile pen of Dr. O. B. Will of Peoria, formerly president of the Illinois State Medical Society. Dr. Will has been in practice in Peoria County for more than forty years, and has been fortunate in knowing personally most of the pioneers of that and adjoining counties of central Illinois. His article will be read with great interest by all our members who appreciate the history of the beginning of things medical in this empire state. The doctor has also drawn a great many lessons from past history which applies to conditions as they now exist all over the state. The bickerings, the petty differences of the early practitioners are almost equaled by conditions different but similar at this time in many communities. If this article serves to inspire a single physician to look on professional life from a broader standpoint, it will indeed accomplish a useful purpose.

We hope that Dr. Will's history of Peoria will be followed by communications from other parts of the state. It is high time that the early history be written. The pioneers have nearly all passed away, and when they have gone much that might now be gleaned will be lost forever. Let us therefore have communications each month from at least one county until the entire state is covered.

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### PRESIDENT TAFT AND THE MEDICAL PROFESSION.

President William Taft has been the most consistent friend of the medical profession we have known in recent public life. He has constantly urged the passage of a bill creating a department of public health, and were it up to him alone this much needed piece of legislation would

be on the statute books. Very recently Mr. Taft expressed a judgment on the value of the services of the profession in eradicating diseases of the tropics which shows him well posted on this very important matter.

Mr. Taft was either in the Philippines as Governor or Secretary of War during the studies of malaria and yellow fever, and of course was intimately acquainted with the researches made by our profession.

*To the Philadelphia Medical Club.*—On the occasion of a banquet which he was unable to attend, the president wrote that the discoveries of American physicians from researches which the taking over of tropical lands made necessary "were ample to justify the expenses of the Spanish War ten times over." Had those researches been encouraged and endowed in the usual manner the return on the investment would have been considered rich indeed. Here is a consequence of one war which the American people unanimously may view with pride, a record of achievement unsurpassed in medical enterprise, however promoted. The triumph is emphasized when it is considered that governments engaged in the colonial business in the tropics for a century or more failed to enlighten the world in this respect. While the medical profession in the United States is thus renowned, it should not be overlooked that to the army physicians the credit is directly due.

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## Correspondence

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### RESOLUTIONS OF THE WILLIAMSON COUNTY MEDICAL SOCIETY

We have received from the secretary of the Williamson County Medical Society the following resolutions which explain themselves. It is an encouraging sign when county societies express their sentiments on fundamental principles as clearly as the brethren in southern Illinois have done. These resolutions as we understand have been forwarded to all societies in the state, and similar action has been taken by many of them. While the language of the resolutions is somewhat complicated, yet their meaning is evident and no doubt the peculiar wording has served to call unusual attention to them.

#### RESOLUTIONS

MARION, ILL., March 2, 1911.

WHEREAS, In the larger cities of the United States there exist a vast number of unnecessary medical colleges, which are run for commercial purposes only; and

WHEREAS, As an inevitable consequence of the intense competition among medical schools arising from this state of affairs, great numbers of incompetent and even illiterate physicians are graduated yearly; and

WHEREAS, Owing to the aforesaid competition among the schools, some even of our best equipped medical colleges are graduating improperly qualified physicians; and

WHEREAS, The state boards of examiners have not, as a rule proved themselves capable of neutralizing, or willing to neutralize, the excessive leniency of the medical colleges; and

WHEREAS, Many city physicians, by means of their professorships in the aforesaid unnecessary medical schools, reap various advantages in the way of honors and fees, which advantages presumably more than compensate said physicians for

the increased competition in practice resulting from the large number of unnecessary schools and from the great freedom with which diplomas and degrees are conferred—compensations which nowhere find their counterpart in country practice; and

WHEREAS, The aforesaid unnecessary medical colleges and the aforesaid lack of stringency in college and state board examinations, with the resulting intense competition in country practice without the compensatory increase in honors and fees enjoyed by the aforesaid city physician as a consequence of the aforesaid deplorable state of affairs, is simply spelling ruin to the country practitioner—a ruin which in no way benefits the public, now, therefore, be it

*Resolved*, By the Williamson County (Illinois) Medical Society that the management of the American Medical Association be thanked for the services already rendered in the way of elevating American Medical Standards, and be it further

*Resolved*, That the said management of the Association be requested to employ hereafter their utmost endeavors to raise the standards of medical (including preliminary) education and of medical practice in the United States of America until these shall have become fully equal (if not superior) to those prevailing in the various countries of Europe.

#### RESOLUTIONS NO. 2.

MARION, ILL., March 2, 1911.

WHEREAS, Various individuals, or collections of individuals, are continually urging, at almost every meeting of the Illinois Legislature, the passage of laws, the object of which is to secure for various persons the right to treat the ailments of the human body, without such practitioners having first submitted themselves to the long and arduous training which such a right would logically presuppose; and

WHEREAS, It has been found by experience that those who seek the passage of such enactments almost invariably do this under color of having discovered some new "school" of medical practice; and

WHEREAS, The promoters of such alleged new "schools" of medical practice almost invariably base their right to practice in spite of an abbreviated course of study, upon the assertion that they do not propose to exercise the healing art in all its extent, but only in certain branches or by certain restricted methods; and

WHEREAS, Experience has shown that those who are thus licensed to practice some particular school, do not, when once before the people, remember their limited pretensions, but proceed straightway to the treatment of all the various bodily ills and by many other methods than those to which, when applying to the legislature, they proposed to restrict themselves; and

WHEREAS, The machinery of the courts has proved itself inadequate to rectify this state of affairs, inasmuch as it cannot deal with the subtle distinctions which exist or can be made to exist between the various so-called "schools" (which distinctions indeed could be multiplied indefinitely, even to the creation of an infinite number of so-called "schools"); and

WHEREAS, There would seem to be no more real reason why "schools" of medicine should be established than why "schools" of law should be established (the greatest room for differences of opinion being properly allowable in either profession, without for that reason letting down the bars of study and adequate preparation); now, therefore, be it

*Resolved*, By the Williamson County (Illinois) Medical Society that it hereby place itself on record as being unalterably opposed both to the creation of new "schools" of medicine and to the extension of the powers of practice of the already existing "schools"; and be it further



*Resolved*, That his Excellency, Governor Deneen, and the Honorable W. O. Potter and the Hons. Hall Whiteaker, R. D. Kirkpatrick and R. P. Hill be hereby requested to exert themselves to their utmost to prevent the enactment of any further legislation looking either toward the creation of new "schools" of medicine or to the extension of the right to practice of already existing "schools"; and be it further

*Resolved*, That copies of these resolutions be forwarded to the said Governor Charles Deneen, the said Honorable W. O. Potter, and the said Hons. Hall Whiteaker, R. D. Kirkpatrick, and R. P. Hill.

Signed,

WILLIAMSON CO. (ILL.) MEDICAL SOCIETY.

Committee on Resolutions:

DR. T. H. SHASTID,

DR. A. J. AIRD,

DR. C. BROWN.

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### ERNEST JONES AND PSYCHOANALYSIS

*To the Editor*:—In the March number of THE ILLINOIS MEDICAL JOURNAL you published the discussion of a paper by Dr. Ernest Jones of Toronto on the psychoanalytical method of treatment. In view of the fact that Dr. Jones' closing remarks, made at a time at which a reply was impossible, contained a rather severe arraignment of the writer, and are in part at least published in your journal, I shall ask the privilege of replying to them in your columns.

His first criticism, wisely omitted, it seems, in the copy submitted to the printer, was that I had spoken of *tabes* in my discussion, when in his paper the word *tabes* did not occur at all. The truth of the matter is, that he had not used the word *tabes*, but rather the term *locomotor ataxia*. Since the learned gentleman from Toronto is director of a clinic for nervous and mental diseases, it seems hardly possible to assume that he is unaware of the fact that the two terms are synonymous. I shall leave it to the reader to decide, whether under these circumstances his denial, made in a most dramatic manner, comes within the range of justifiable criticism.

Dr. Jones claims that Freud uses the term *sexuality* "in a definite, logical sense." That is exactly where we differ. If that were true there could be no argument at all, but it is precisely because we believe that Freud goes altogether too far in his definition that many of us cannot accept his theory. The brilliant sally contained in the second part of this same paragraph was clearly an afterthought. At least, I do not recall having heard it at the time of the meeting, nor is it contained in the stenographic report of the same. If all human activities are to be traced to a sexual factor, then indeed a sexual factor must be responsible for the psychoneuroses, as well as for all other psychic manifestations, be they normal or abnormal. It seems to me that I was sufficiently clear in stating that the premises in this argument are to me unacceptable. I did not, as Dr. Jones would have us believe, criticize Freud for changing his views. Most of us do that occasionally, and I hope to see the day when even Dr. Jones will do so. In fact, I stated specifically that "no scientist

need be ashamed to modify a theory," but I not only said, but by giving specific facts demonstrated, that in changing his views Freud weakened his theory, which is quite a different thing from merely modifying it.

At the time of the meeting I gave a number of examples of what appeared to me absurd interpretations of dreams. I mentioned at the time that these examples were taken from a book recently published by one of Freud's pupils, Hitschmann, who in his preface states that the book was read and approved by Freud himself. This book Dr. Jones claims to have read—not once, but several times. I thought it advisable to quote authority for these examples, because I feared that some of the audience who were not familiar with the literature on the subject, might, just because of their absurdity, doubt the correctness of my statements. That such a doubt should be expressed by a man, who had given as much time and study to this question as Dr. Jones, was a surprise indeed. When he stated positively "that Freud has never said anything resembling this," I can only ask him to read Hitschmann's book once more. If he will turn to page 69 of that work he will find among a list of "typical sexual symbols" ("typische sexual-symbole"), *quoted from Freud*, the very two which he objects to, together with quite a collection of similarly absurd ones. If, therefore, he claims that Freud has never said anything resembling this, his statement is flatly contradicted in a book read and endorsed by the father of the psychoanalytical method himself.

The next paragraph reads as follows: "Dr. Kuh says he has read in Hitschmann's book that thumbsucking represents a *subconscious* sexual act. This must certainly be an error, for Hitschmann never used the word *subconscious*, etc. . . ." Any one who has read Freud would know that thumbsucking is mostly performed at a time of life when there is no *unconscious* [sic!] mentality at all." What Dr. Jones really said at the time of the meeting is as follows (I am quoting from the official stenographic report, obtained through the courtesy of Dr. Suker, Secretary of the Chicago Medical Society): "Dr. Kuh has read Hitschmann's book, and says that therein thumbsucking was represented as an attempt to gratify a *subconscious* sexual desire. I have read the book three times through, and I do not find that it contains these words. Anyway, that would not be compatible with the Freud theory, because according to Freud there is no *subconscious* life in the very young." What I really did say (quoting from the same official report) is as follows: "Now I cannot follow him when he asks us to see in the sucking of the thumb of the infant an attempt to gratify an *unconscious* sexual craving." I wish to submit that for the purpose at hand it is absolutely immaterial whether the act be *subconscious*, *unconscious* or *conscious*. The only essential thing is that Freud and his followers see in this act a sexual significance. When Dr. Jones, in closing the discussion, claims that I spoke of a *subconscious* sexual desire, he misquoted me; when in his printed remarks he disclaimed the existence of an *unconscious* life in the very young, he makes a statement which need hardly be refuted here. Furthermore, Dr. Jones, if he will read Hitschmann's book for a fourth time, will find on page 33 the statement that the habit in question may

he continued "bis in die Jahre der Reife," when we find conscious, sub-conscious and unconscious mental activities. Incidentally, I spent a pleasant hour or so attempting to understand how the *subconscious* (or is it unconscious?) life can be traumatized at a time at which it does not exist. I must confess myself incapable of performing the necessary mental acrobatics.

The discussion was closed with these crushing remarks, considerably modified in the printed report: "In view of all that Dr. Kuh has said, I must say that I am hardly surprised that he concludes by saying that *in the cases* in which he has tried psychoanalysis he has had bad results." It is not uninteresting as an illustration of Dr. Jones' methods to quote from my own statements the words on which this discourteous sentence is based: "Under these circumstances, and in view of the fact that *in one instance* I have certainly had disagreeable results, I feel that it is not a safe method of treating the psychoneuroses." It is precisely because of such methods as those used by Dr. Jones and other of Freud's pupils who substitute abuse for scientific argument, that a strong feeling of antagonism has arisen against these theories. If such antagonism is evidence of ignorance, as they would have us think, I may not without pride point to the fact that I share this stigma with such men as Forel, Hoche, Aschaffenburg, Oppenheim, Kraepelin and others of similar standing and reputation.

SIDNEY KUH.

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*To the Editor:* For obvious reasons this letter must appear anonymously. I desire to submit to you a question that appears to me to need some discussion.

I reside in a small city where gossip is the main product. A man aged 30 years, head cook in a leading hotel, was referred to me by a colleague for diagnosis. I found an undoubted case of syphilis in the desquamative stage. The case had been without treatment of any sort from the beginning. The skin was full of scales and the throat badly ulcerated. The tongue was studded with mucous patches. The hair was falling out in bunches.

I told this man his condition, offered my services free of all charge, but said to him that he must not under any circumstances return to his work. Moreover, I assured him that I felt it to be my duty to report his condition to his employer.

With the consent of the patient, I reported to the employer, who paid off the man and bought him a ticket to another town. Ought not this man to have been quarantined?

Within a year I had the same experience with the same hotel in the person of another patient, and followed precisely the course that was taken in the former case. Was I not justified in reporting the condition to the hotel proprietor?

Within a few months I saw five cases of syphilis in which the primary lesion was about the mouth and lips. In two of these cases I have the best of reasons for saying that the patients contracted the disease in a way

wholly unknown to them. Both were frequent diners at the hotel where the infected cooks were working.

INQUIRER.

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### HOTEL ACCOMMODATIONS AT AURORA

We have received the following statement in regard to hotel accommodations at Aurora, which would indicate that the profession and citizens intend to make ample provision for the care of the visitors.

AURORA, ILL., March 20, 1911.

*To the Editor:*—Received your letter in regard to hotel accommodations.

The Hotel Arthur can accommodate . . . . 150 people; rates \$2.50-\$3.00  
The Hotel Bishop can accommodate . . . . 150 people; rates \$2.00-\$3.00  
The Hotel Grand can accommodate . . . . 75 people; rates \$1.50 . . . .  
The Hotel Artlington can accommodate . . 50 people; rates \$1.50-\$2.50  
The Hotel Schiltz can accommodate . . . . 50 people; rates \$1.00-\$1.50  
The Hotel Burton Block can accommodate 30 people; rates \$1.00 . . . .

The Hotel Arthur will be nearest to the meeting place. Besides the hotel accommodations we will have a list of rooms in private families where the members will be well taken care of. These rooms will be only in the better homes. We will have automobiles at the depot to convey members to the various destinations. During the G. A. R. encampment, Aurora took care of between 1,000 and 1,500 people and had accommodations in great plenty, so we will have no difficulty in taking care of all who come. Our endeavor is to do the thing up brown, and we trust that Aurora will have the pleasure of giving the State Society one of its most enjoyable meetings. Aurora is the best city in Illinois. Drop in on May 16 and we will prove it.

Most sincerely,

H. A. BRENNECKE, M.D.

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### ANNUAL MEETING AT AURORA

The sixty-first annual meeting of the Illinois State Medical Society will be held May 16, 17 and 18 at Aurora, Kane County. There is every reason to expect a very large attendance. Those accustomed to forecasting these matters prophesy the largest in the history of the Society. The city of 35,000 is in the beautiful Fox River Valley, only one hour's ride from Chicago, to which it is connected by both electric and steam railroads. Its railroads are the C. B. & Q., B. & N., F. R. V., E. J. & E., I. I. & N., C. & N. W.; and it is connected by trolley with nearly every other Illinois railroad entering Chicago.

The accommodations are ample. The following hotels are already making reservations: Hotel Arthur, Hotel Bishop, Hotel Arlington, Hotel Grand and Hotel Schlitz.

SECRETARY OF COMMITTEE OF ARRANGEMENTS.



### *Preliminary Program*

ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, TO BE  
HELD AT AURORA, ILL., MAY 16, 17 AND 18, 1911

The following program is merely a preliminary arrangement. The final program will appear in the May JOURNAL, with an announcement as to the orators and various addresses, with completed arrangement of the program.

1. The Health Conscience and the Drink Problem, C. B. Johnson, M.D., Champaign.
  2. Limb Grafting: Technic, Results, V. D. Lespinasse, M.D., Chicago.
  3. The General Practitioner and Preventable Blindness, Thomas A. Woodruff, M.D., Chicago.
  4. *Gynecologic Symposium:*
    - a. Vesicovaginal Fistulæ, Alice Conklin, M.D., Chicago.
    - b. Hernias of the Ovary and of the Fallopian Tube, Aime Paul Hein-  
eck, M.D., Chicago.
    - c. The Puerperium Treated as a Period of Prophylaxis Against Sub-  
sequent Abdominal Pelvic Diseases, Carey Culbertson, M.D.,  
Chicago.
    - d. The Abuse of Local Treatments in Gynecology, Henry T. Byford,  
M.D., Chicago.
  5. Strangulation of Bowel, with Report of Case, J. Estill Miller, M.D.,  
Pittsfield.
  6. Diagnosis of Acute Poliomyelitis, L. Harrison Mettler, M.D., Chicago.
  7. *Kidney Symposium:* Late Methods in the Diagnosis of Kidney Dis-  
eases.
    - a. Functional Diagnosis, Herman L. Kretschmer, M.D., and L. E.  
Schmidt, M.D., Chicago.
    - b. Examination of the Urine and Blood in Relation to Diagnosis,  
A. R. Elliott, M.D., Chicago.
    - c. Diagnostic and Therapeutic Uses of Pelvic Lavage and Direct  
Application to the Kidney and Ureter, L. W. Bremmerman, M.D.,  
Chicago.
    - d. Eye Findings in Renal Diseases, C. E. McClelland, M.D., Decatur.
    - e. Lantern Slide Study of X-Ray Diagnosis of Kidney Lesions and  
the Results of Injection of the Pelvis of the Kidney with Silver  
Salts, Patrick S. O'Donnell, M.D., Chicago.
    - f. Pyelonephritis in Some of Its Earlier Phases, E. Mammen, M.D.,  
Bloomington.
- Discussion will be opened by William Fuller, Charles E. Paddock and  
D. N. Eisendrath.
8. Double Hernial Sacs, Dean D. Lewis, M.D., Chicago.
  9. Intestinal Toxemia, M. M. Mack, M.D., Chicago.
  10. The High Caloric Diet in Typhoid Fever, Joseph L. Miller, M.D.,  
Chicago.
  11. Arteriosclerosis, M. S. March, M.D., Peoria.

12. The Clinical Determination and Significance of Some of the Peripheral Signs of Aortic Insufficiency, Frederick Tice, M.D., Chicago.
  13. Studies in Mixed Infection in Pulmonary Tuberculosis, R. T. Pettit, M.D., Chicago.
  14. Fractures of the Skull. A Lantern Slide Discussion, Frederic A. Besley, M.D., Chicago.
  15. The Surgeon and the Near Surgeon, J. W. Hamilton, M.D., Mt. Vernon.
  16. Congenital Umbilical Hernia, with Description of a New Operation, Frank A. Palmer, M.D., Morris.
  17. The Surgical Significance of Rheumatism, Alex. C. Wiener, M.D., Chicago.
  18. Bone as a Nucleus of Vesical Calculus, Charles L. Patton, M.D., Springfield.
  19. The Anesthetist as a Member of the Surgical Team, T. W. Gillespie, M.D., Peoria.
- Discussion by Arthur Dean Bevan.
20. *Cancer Symposium:*
    - a. Cancer in Animals, Maximilian Herzog, M.D., Chicago.
    - b. Cause and Prevention of Cancer, F. R. Zeit, M.D., Chicago.
    - c. Early Diagnosis of Cancer, M. L. Harris, M.D., Chicago.
    - d. Surgical Treatment of Cancer, S. C. Stremmel, M.D., Macomb.
    - e. Treatment Other than Surgical, Arthur Dean Bevan, M.D., Chicago.

M. P. PARRISH, Secretary Surgical Section.

E. B. COOLEY, Secretary Medical Section.

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—There are now 1,387 bakeries in the city; 1,093 of these are well lighted and ventilated and are classed as daylight bakeries; 294 are below the level of the street and are called cellar bakeries.

During the year 1910 there has been an increase of seventy-one in the number of daylight bakeries and a decrease of cellar bakeries. This has been followed by improved standards of cleanliness of 30 per cent. in the opinion of the inspectors, and this will unquestionably result in better health of employees and increased patronage of the public.

While the largest per cent. of improvement in the bakery situation was in 1909, the per cent. in 1910 has been very creditable and is really more than the figures indicate.

The important item during the last year has been the construction of sixty new bakeries from building plans approved by the Sanitary Bureau. This has insured healthful working conditions to the employees and wholesome food products to the public. The expense of maintaining inadequate, artificial light and ventilation appliances, as well as loss incurred from frequent flooding of cellars and the greater depredation of rats, have been important factors in discontinuing operations in such locations.—*From Bulletin, Chicago Department of Health.*

## COUNTY AND DISTRICT SOCIETIES

### ADAMS COUNTY.

The regular monthly meeting of the Adams County Medical Society was held in Quincy, Ill., Dec. 12, 1910, with President D. M. Knapp in the chair. Others present were: Drs. Austin, Ball, Rafferty, Nickerson, A. D. Bates, Collins, Bearman, Gilliland, Pittman, Wessels, R. Meserve, Pendleton, Knox, Millem, Pfeifer, Shawgo, J. B. and Kirk, Koch, Brenner, Pierce, Bierne, Center, Rice, Johnston, Bloomer, Christie, Haxel, Schullian, Reticker, Ehle, Nichols, Irwin, Ericson, Blickhan, Williams, Ruth, Whitlock and Wells. The minutes of the last meeting were read and approved. Dr. Nickerson as chairman of the committee to meet with the board of education, in regard to medical inspection of the public schools, made a favorable report and stated that the plans for said inspection would soon be completed and announced by the board of education. The committee on quacks and their advertising was called upon, but had no report on hand. In connection a communication was read by the secretary, from the secretary of the State Board of Health, showing that it is possible to prosecute itinerant venders of medicine and nostrums under a ruling of the supreme court of the State. The communication was placed in the hands of the above committee, and also that of our legislative committee.

The matter of election of officers was the next consideration, and resulted as follows: President, J. B. Knox; first vice-president, J. H. Pittman; second vice-president, J. T. Brenner; secretary, Elizabeth B. Ball; treasurer, R. J. Christie; Censors: L. H. A. Nickerson, H. P. Bierne, D. M. Knapp.

The scientific program was abolished on account of the absence of those who were to take part. The time was taken up with general talk about coroner's inquests, etc. On motion the Society adjourned.

The Adams County Medical Society met in regular session Monday, March 13, at the Chamber of Commerce Rooms, with President J. B. Knox in the chair. Members present: Kirk Shawgo, Christie, Wells, Ball, Gilliland, Ericson, Center, Beirne, Nickerson, Williams, Mercer (W. E.), Pearce, Knaphaide, Gabriel, Pfeiffer, A. D. Bates, Werner, and the honored speaker of the day, Dr. Carl E. Black, of Jacksonville, Councilor for Adams and other counties in the district.

The various legislative bills, which are either in the House or Senate, were considered singly and action taken on each one. After luncheon at the Hotel Newcomb, Dr. Carl E. Black addressed the society on "The Relation of the Medical Profession to the Public Press." It was a very complete and interesting paper and enjoyed by all present. A rising vote of thanks was tendered to Dr. Black for his able address and to show our appreciation of his visit to us. On motion meeting adjourned.

### ALEXANDER COUNTY

The Alexander County Medical Society held its regular meeting February 16, 1911, at Cairo, Ill. An unusually large number of the members were present and the program was an interesting one. The paper of the evening was read by Dr. G. H. McNemer on "The Thyroid Gland." This paper was fully discussed by all present. Interesting clinical cases were presented by Drs. W. F. Grimstead and A. A. Bondurant. Two new members have recently been added, and the affairs of our society are in a flourishing condition.

## COOK COUNTY

## CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

*Regular Meeting, Dec. 20, 1910*

A regular meeting was held Dec. 20, 1910, with the president, Dr. Geo. E. Shambaugh in the chair.

## CYSTS OF THE ANTRUM OF HIGHMORE

J. R. FLETCHER, M.D., CHICAGO

Dr. Fletcher called attention specially to the bony cysts of the alveolar process as the result of disturbed development of the embryonic tooth. They develop at the expense of this process and the cavity of the antrum, when large, pushing the anterior wall of antrum forward, sometimes raising the floor of the nose and depressing the roof of the mouth. These cysts are filled with fluid containing cholesterolin and have an inner layer of pavement epithelium and an outer layer of connective tissue. They do not communicate with the nose or antrum and are found either closed and sterile or open and infected. The latter communicate with a carious tooth root. If the tooth is lost the cyst content may become caseous. These are the dentigerous cysts in distinction from cavities formed in the alveolar process caused by suppuratation and lined with connective tissue only, dentary cysts.

The real antral cysts are membranous and occur within its cavity, are usually multiple and may be as large as the end of the thumb. These cysts are caused by chronic inflammatory disease of the antrum producing degeneration of the gland ducts. The glands themselves may participate in cyst formation. Multiple cysts may communicate with each other. The cysts of the ducts are small, lined with ciliated epithelium. In the large cysts the pressure changes the epithelium to the pavement variety. The cysts formed from glands are lined with cuboid epithelium. In a few instances endothelium lines the cysts. In such cases it is supposed that the cysts result from obstruction of lymph vessels. Membranous cysts occur from all parts of the antrum. Polyps occur only about the natural openings into the nose.

Fluid from the antrum never contains cholesterolin. The only condition that is capable of producing an ectasia of the anterior wall of the antrum is the bony dentigerous cyst. The old term *hydrops antri*, applied to the cases presenting a bulging of the anterior wall of the antrum, is incorrect since fluid in the antrum could not cause such a bulging. When fluid in the antrum produces bulging this takes place in the membranous portion of the lateral nasal wall. The literature is full of confusion regarding bony dentigerous cysts, membranous cysts and the supposed condition of *hydrops antri*.

The diagnosis of dentigerous cysts is made by the history of long painless development, bony protrusion of the canine fossa, crepitation upon palpation, absence of communication with either the nose or antrum, and by the evacuation of fluid or caseous material both containing cholesterolin.

In the treatment of bony cysts four things are to be considered: first, cure of infection, second, obliteration of cysts, third, correction of deformity of cheek and roof of mouth, and fourth removal of nasal obstruction. Heretofore operators have been satisfied to open the cyst, remove its lining and irrigate until discharge ceases. The following operation is suggested: removal of the bulging wall of the canine fossa through the mouth under the periosteum, taking away the lining membrane and making the bony cyst wall sterile; fracture the cyst wall protruding into the nose and mouth in many directions without perforation; push adhering bony fragments into the lumen of the cyst; pack the nose and insert hard rubber dental plate into the mouth; puncture the antrum and fracture the posterior cyst wall in several directions; introduce a long thin rubber tube like an elongated finger cot through one of the openings into the antrum; fill it with air or fluid in order to press forward the fragments of bone adherent to antral membrane; cover the denuded bony cyst fragments with the elevated periosteum



and close the wound leaving room only for the tube, which may be withdrawn after a few days.

#### DISCUSSION

Dr. O. T. Freer agreed with Dr. Fletcher that bulging of the buccal, temporal and orbital walls of the maxillary antrum did not occur as a result of empyema or catarrhal inflammation of its lining, but was an evidence of the presence of the bony cysts described by Dr. Fletcher. The nasal wall, however, Dr. Freer had found to be an exception in this respect and he even regarded its protrusion into the nasal cavity, in the thin portion of the wall in the middle meatus, as characteristic in many cases of empyema of the antrum. In one case, indeed, that of a twelve-year-old girl, the bulging involved not only the middle meatus but the entire nasal wall as well, causing it to press firmly against the septum, carrying over the lower turbinate with it, the whole condition simulating a bulging tumor, for which it was at first mistaken. The reason for this extreme bulging was a collection of inspissated pus which lay wedged in firm clots in the antrum. In this case the entire nasal wall, with the lower and middle turbinated bodies, was removed, throwing antrum and nasal cavity into one, the patient recovering completely.

Dr. Andrews referred to a case of antrum disease he operated upon three years ago. In opening through the canine fossa he came upon a very shallow but apparently healthy antrum. Having found unmistakable intranasal evidence of antrum disease, he punctured the posterior wall and found another and larger cavity containing pus in abundance. There must have been two antral cavities, separated by a complete partition, although he did not notice any communication between the anterior cavity and the nose or the posterior cavity.

Dr. Beck referred to the ease with which the diagnosis can be made by means of the radiogram. He finds that as a rule there exists a marked symmetry between the two antra and not the asymmetry referred to by Dr. Fletcher.

Dr. Fletcher (closing) stated that he agrees with Dr. Freer that the wall of the middle meatus may be bulging into the nose as the result of fluid in the antrum. When this exists it is confined to the membranous portion. Whenever the bone gives way one should suspect bony cyst. In Dr. Andrews' case he believes that the cavity first entered was a dental cyst. Regarding the radiograph as a means of diagnosis he does not consider this a necessary procedure, besides it is rather expensive. The fact that he has seen four of these cysts in a period of four years leads him to believe that they are much more common than one would judge from the number of cases reported.

#### ACTINOMYCES IN TONSILLAR CRYPTS

LORENZO N. GROSVENOR, M.D., CHICAGO

Dr. Grosvenor called attention to the fact that the ray fungus has its native parasitic habitat in the stalks of such grains, grasses and corn as cattle feed upon. In this manner the actinomyces gain entrance into the mouths of cattle, lodging in the crevices where they set up actinomycosis of the jaw, tongue, etc.

Macroscopically this fungus is found as a yellowish, hard, dense, fibrous nodule. Microscopically it presents a granular center with radiating, branched, thickly tangled mass of mycelial threads terminating in club shaped radiating forms.

Jonathan Wright<sup>1</sup> reports that the chief seat of infection in man is in and about the mouth, from there passing on into the thorax or abdomen. The actinomyces evidently become dislodged from their primary foci in the mouth and are passed on into the respiratory or digestive tracts.

The crypts of the tonsils prove to be a frequent nesting place for these fungi. In looking over the tonsils removed from one hundred patients, mostly children, Dr. Grosvenor finds the actinomyces in the crypts of the tonsils from fourteen cases. Here the fungi increase in number and size, crowding aside the walls of

1. Am. Jour. Med. Sc., July, 1904.

the crypts and by their irritation stimulate a great proliferation of the lining epithelial cells, with finger-like columns or masses of cells crowding into and even surrounding islands of lymphoid cells. This proliferation of epithelia forms a bulwark of protection against the invasion of the actinomycetes into the tonsillar tissue. Immediately surrounding the fungi in the crypts are found many groups of swollen leukocytes with granular or fragmented nuclei. Such are the findings in the study of a large number of sections from the tonsils of the fourteen cases. Typical sections of these cases were demonstrated to the society by the microscopio-stereopticon.

#### DISCUSSION

Dr. O. T. Freer examined the slides shown by Dr. Grosvenor with the microscope and saw characteristic ray fungi, so that Dr. Freer is convinced of the correctness of Dr. Grosvenor's findings.

Dr. J. C. Beck thought that the fact that Dr. Grosvenor studied these cases with Dr. LeCount made this contribution valuable, although it is astonishing that so many cases of actinomycosis were found. If such a state of affairs really existed there ought to be more cases of actinomycotic infection of the neck. The epithelium lining these crypts is, as a rule, very much degenerated and helps to form a mass which fills in the crypts. The leptothrix is frequently found in these masses and should not be mistaken for the actinomycetes.

Dr. H. Kahn inquired as to the relative age of the patients, their occupation and whether any cultures had been made from the tonsils; whether the cases had been selected or represented the average case.

Dr. Andrews presented a case of disease of the tongue he had seen some years ago which was later found to be actinomycosis. When he saw the case the tongue was swollen, deeply furrowed, indurated and painful. He was unable to ascertain the cause of the trouble at the time, but the case finally came under the care of Dr. Tenney who made a diagnosis of actinomycosis. Under Dr. Tenney's care the distressing symptoms had entirely disappeared although the tongue is still furrowed and shows some evidence of disease.

Dr. A. C. Tenney said that the condition of the tongue in this case was extremely distressing. There were many deep furrows, it bled easily and seemed to be covered with granulation tissue, presenting an appearance which had led to the diagnoses of tuberculosis and also of malignant disease. When he first saw the case he was convinced that it was one of overgrowth of granulation tissue, such as is seen in the conditions classed under the head of *granulomata*; syphilis, tuberculosis, actinomycosis, and the early invasions of malignant growths. Syphilis was excluded by the history and the fact that a long anti-specific treatment had availed nothing. Tuberculosis was excluded by the lack of secondary infection, absence of fever and other symptoms. Actinomycosis was suggested by the nodules in the salivary ducts, which it has been shown offer the least resistance, after the tonsil, to this disease. In this case the invasion was very apparent and Dr. Tenney thought it was a case of salivary lithiasis. However, there were also nodules in the glands which pointed to a possible actinomycosis. Dr. Adolph Gehrmann examined the specimens and found the first and second to be negative. Then the surface of the tongue was scraped in the morning before anything had entered the mouth and the actinomycetes were found in the scrapings. Another confirmatory sign was that when the patient was under alternative treatment she improved, while under mercurial treatment she suffered. Under mixed treatment there was no change. The problem was how to give her sufficient iodine to control the condition without getting any of the deleterious effects of the mercury, potash or sodium. Therefore, he resorted to the internal administration of iodine in organic combination and the patient has been kept in a very comfortable condition. The tongue is now fairly smooth although there is still some infection present. The local treatment consisted in the application of potassium iodide by electrolysis. When this failed to give the desired results he resorted to the use of copper with a mild galvanic current. Under this treatment, covering a period of about six or eight months, the general health of the patient improved and the local condition is markedly better. The patient is clinically well.

Speaking of Dr. Grosvenor's paper Dr. Tenney said that Dr. Grosvenor evidently assumed that the tonsil is a resisting organ. His observation would lead him to assume the opposite attitude, that the tonsil has the least resistance of any, because the crypts furnish a splendid culture ground in which the actinomyces develop to such an extent that they assume the rod formation and subject the patient to the danger of systemic involvement. The great danger in these cases is extension to the intestinal tract and lungs, and he wondered whether a case of tuberculosis reported by Dr. Grosvenor was not one of actinomycosis of the lung. Osler says that when one finds abscesses forming sinuses, the pus containing white or yellowish bodies, actinomycosis should be *suspected*. It is important to make an early diagnosis of actinomycotic infection in these cases so that when they come to the specialist and the tonsil is the primary seat of the disease, a tonsillectomy may be done immediately, thus saving the patient from systemic infection.

Dr. Grosvenor (closing) urged that the members make an examination of his microscopic slides, inasmuch as the details could not be seen so well in the lantern slides. He has been in the habit for ten years of working up microscopically all the tonsils which he removed himself. He had noticed these fungi in the tonsils and had regarded them as actinomyces, without, however, taking time to study the subject. However, when careful examination was made he found actinomyces in the crypts of 14 tonsils out of 100 cases studied. Most of these patients were children or young adults. He did not know that these were cases of actinomycosis until after the tonsils had been removed and examined. Therefore, he did not pay so much attention to the clinical phase of the subject. However, in looking up the history he found that in every case there had been a severe tonsillitis a month or two before the removal of the tonsils, and that there had been previous attacks. Metchnikoff and others have considered the actinomyces related to the tubercle bacilli because branching forms of the latter have been found in sputum, and some observers have gone so far as to say that the tubercle bacillus is one of the stages of the actinomyces. The tonsils are the best incubators for bacteria of all kinds. Jonathan Wright, in 1904, showed the tonsils themselves did not become involved in the actinomycotic process but that systemic involvement may occur.

## DEVELOPMENT AND STRUCTURE OF THE TEMPORAL BONE

GEORGE W. BOOT, M.D., EVANSTON, ILL.

Dr. Boot gave a lantern slide demonstration illustrating the state of development of the temporal bone during different periods of life from the ninth month of fetal life to the adult bone, also several sections of adult bones showing the relations of the various parts. The young bones showed the exit of the facial nerve opposite the middle of the annulus tympanicus and the danger of its being injured if the ordinary incision for mastoiditis were made in early infancy. They also showed the absence of a bony external auditory canal. Sections of the young bone showed the location of the antrum tympanicum wholly above the horizontal line running along the lower border of the zygomatic process, but section of the bone from a two-year-old child showed that the antrum had assumed its adult position below the zygomatic process.

The absence of the mastoid apophysis was shown in the young bones. Attention was called to the direction in which the annulus tympanicus developed, which was not outward, in a direction at right angles to the plane of the ring but rather nearly in the plane of the ring, the development proceeding most rapidly at the anterior and posterior tubercles and at the lowest point of the ring. In cases where this last point of development did not proceed as rapidly as the others there is left a congenital defect in the anterior wall of the bony external auditory canal.

The location of the petro-squamous suture was shown as it runs through the tegmen of the antrum and tympanum and just below the antrum tympanicum on the outer surface of the bone.



## DISCUSSION

Dr. George E. Shambaugh pointed out that this demonstration of the developing temporal bone made quite clear a number of conditions well known clinically. One of these is the readiness with which an otitis media in an infant produces changes back of the auricle with the frequent development of a sub-periosteal abscess. This is accounted for by the fact that the antrum tympanicum in an infant lies very close to the outer surface of the temporal bone. The bony shell of the antrum in addition to being very thin is quite porous. The petro-squamosal suture in the infant makes still more free the communication between the interior and the outer surface of the bone. These anatomical conditions also explain why the simple Wild's incision accomplishes so much more in an infant than it does in an adult. In fact by a simple Wild's incision one has often the result of a Schwartze operation in an infant.

Another clinical fact which is explained by the anatomical preparation exhibited is that in an infant any manipulation of the outer ear causes a great deal of pain in cases of acute otitis media, whereas in the adult this does not occur. The explanation lies in the fact that in the infant there is no bony meatus and the membranous part of the external meatus is attached to the ostympanicum to which the drum membrane is also attached, and any manipulation of the auricle is bound to disturb the structures at the bottom of the canal which are inflamed in acute otitis media.

Dr. Boot (closing) stated that in order to enter the antrum through the petro-squamosal suture it is necessary to pass in an oblique direction upward, that passing directly in a horizontal plane enters often below the antrum.

## HISTOPATHOLOGY OF ETHMOIDITIS

J. C. BECK, M.D., CHICAGO

Dr. Beck demonstrated by means of microscopical slides thrown on the screen the histo-pathology of chronic ethmoiditis with special reference to the paper read by Dr. Marquis at the last meeting, in substantiating the existence of at least two distinct pathologic types of the disease. To some members, not being convinced of the existence of the pathologic entity as the hyperplastic form, which has been so thoroughly studied by Uffenorde abroad and Skillern in this country. Dr. Beck believed that he could demonstrate conclusively the existence of this form of ethmoiditis. Not only pathologically, but certainly clinically, most observers have seen ethmoidal disease with and without the presence of pus. Polypi may and do exist in both types of ethmoidal disease, but the polypi also differ in their histo-pathologic consistency. The distinction of these two forms of ethmoiditis is also important from the therapeutic point of view, as well as the course of the affection. The one great difference in these two processes is essentially this: that in the suppurative form we have an inflammatory condition with the increase in the tissues due to such changes, including the epithelium, sub-epithelial tissue, the areolar tissue and blood-vessels. The glands are not much destroyed early in the process. The bone is frequently involved in the inflammatory process and later often becomes necrotic while in the non-suppurative form the increase in the tissue is principally a degenerative process of a myxomatous type. Here the glands are markedly changed in atrophy and cystic or myxomatous degeneration. Inflammation is not present to any degree. There are also various degrees of changes in both the varieties, as Dr. Freer has mentioned at the last meeting of the A. M. A. The changes are a matter of degree of either inflammation or degeneration and destruction. As to the etiologic factors Dr. Beck could say nothing positive but was inclined to believe that both varieties were due to a process of infection. In the non-suppurative form there existed most probably at one time infection which was of a lower form of microorganism and this continued as a low grade of inflammation and degeneration. That deflection of the septum and ridges on the same which come in close contact with the middle turbinal may act as an irritative cause or shut off the ventilation and drainage of the ethmoidal region and bring about the so-called hyperplastic



changes with the whole coterie of symptoms can easily be accepted, as Uffenorde and others show.

The specimens shown were as follows:

LOW POWER 1/3.—A. (HYPERPLASTIC) NON-SUPPURATIVE ETHMOIDS:

CASE 1.—Early involvement; 1. Middle turbinal; 2. Uncinate process.

CASE 2.—Later involvement: 1. Polypus; 2. Middle turbinal; 3. Ethmoidal curetments.

CASE 3.—Previously operated and reoperated on: 1. Polypus; 2. Remains of middle turbinal; 3. Ethmoidal curetments.

B.—SUPPURATIVE ETHMOIDITIS:

CASE 1.—Three months standing: 1. Middle turbinal; 2. Ethmoidal curetments.

CASE 2.—Five years standing suppuration. Previously operated upon and reoperated on: 1. Polypus; 2. Middle turbinal; 3. Ethmoidal curetments.

HIGH POWER 1/9.—Non-suppurative: 1. Polypus; 2. Middle turbinate; 3. Ethmoidal curetments.

SUPPURATIVE: 1. Polypus; 2. Middle turbinate; 3. Ethmoidal curetments.

Dr. Beck stated that the close study under the microscope would bring out the points made much better than when these preparations are thrown on the screen and that in the near future he would present this subject more advantageously with illustrations.

#### DISCUSSION

Dr. Freer said that Dr. Beck's specimens were a beautiful display of the pathologic histology of ethmoiditis and were a valuable confirmation of what had been found clinically in operations. The proof of the existence of chronic inflammatory changes in the bone, by Dr. Beck, seemed especially important to Dr. Freer.

Dr. Ballinger said that he has always believed that the suppurative and non-suppurative types of ethmoiditis had the same etiology. In the suppurative type suppuration is present because the infection is more virulent. In the hyperplastic type suppuration is absent because it is a lower grade of infection. He believes the two conditions call for the same treatment although the non-suppurative may not require as radical treatment as the suppurative type.

Dr. Beck (in closing) stated that various conditions, such as ridges, spurs, deflections and the like, cause an irritation which is followed by an inflammation, but that is not the sole difference between the suppurative and non-suppurative types of ethmoiditis. The non-suppurative type is a degenerative process of the mucosa in which by pressure only will there follow changes in the bone. The suppurative variety is an infectious process which eventually results in bone necrosis. In one, extensive treatment will lead to chronic suppuration of the surface, whereas in the non-suppurative type possibly a middle turbinectomy will prevent further degenerative changes and result in a cure.

#### TRANSILLUMINATION OF THE MASTOID

Dr. Shambaugh exhibited an apparatus for transillumination of the mastoid. This consisted of a small bronchoscopy lamp on a stiff holder about 6 inches long. The holder is covered by a heavy rubber sheath, from the end of which the lamp projects. The rubber casing is large enough so that when the lamp is placed in the external meatus the casing will occlude the outer opening of the meatus and prevent the escape of light along the walls of the canal. Without this occlusion of the meatus the illumination of the mastoid would often be obscured by the escape of light along the wall of the meatus. He believes that this method of transillumination of the mastoid by placing the lamp in the external meatus will prove superior to the method described several years ago by Dr. Andrews where a lamp is placed over the mastoid while an inspection of the meatus is made.

Dr. Shambaugh pointed out that transillumination of the mastoid has distinct limitations, just as the same test when applied to the nasal accessory sinus. In the first place the degree of illumination of the normal mastoid depends on the extent to which the process is supplied with pneumatic spaces. In a process free from air cells the illumination will be absent. Fortunately, the type of process found on the two sides is usually the same, so that if one mastoid is pneumatic the other will be too. The comparison between the two sides when disease is suspected on one side will therefore be of great assistance. In cases of chronic suppurative otitis media the mastoid is frequently the seat of osteosclerosis, with an absence of pneumatic cells. Here the mastoid will of course be dark. In these cases examination of the ear by other means will perhaps give us more definite clues as to the existence of conditions which may lead to serious complications and for which an operation is indicated.

It would seem that this method of examination will be of the greatest aid in acute cases of unilateral otitis media, where there is an absence of the classical symptoms of mastoid abscess, such as the characteristic change in the external meatus or the development of tenderness over the mastoid, but where especially the persistence of discharge suggests a mastoid abscess. The presence of a shadow on the mastoid in the early stages in this type of case cannot be accepted as a positive indication for an operation, because the occurrence of congestion in the mastoid cells usually present in all cases of severe acute otitis media will also produce a shadow even in the absence of any softening of the bone. The lamp requires, of course, a rheostat and a suitable cable. The entire apparatus is simple and can be adjusted by any one, or it can be secured complete from the firm of A. B. Mueller of this city.

Dr. J. Holinger thought that this method of examination would prove to be of value in chronic cases of mastoiditis.

#### DISCUSSION

Dr. A. H. Andrews said that there are many pathologic conditions and some normal ones which will show a shadow in the mastoid. It is not always easy to interpret the findings. He has watched acute cases and has seen a shadow come as the case progressed and disappear as the case recovered. A shadow, he said, is not always an indication for mastoid operation. In the cases that seem to be passing from the acute or subacute into the chronic stage, where the patient complains little, but does not progress as he should, transillumination is a very valuable addition to other methods of examination of the mastoid, but the findings in all cases must be interpreted in the light of experience and reason.

Dr. Shambaugh states that he believes the method will be of more positive assistance in the acute cases verging on what might be termed a subacute condition, but without positive evidence of mastoid abscess. An article by Gustav Dintenfuss in the last number of the *Archiv. für Ohrenheilkunde* discusses this method of transillumination of the mastoid.

In the case of chronic suppuration from the middle ear Dr. Shambaugh suspects that we will be able to place more confidence in other methods of examination to detect the existence of involvement of the temporal bone, with or without the invasion of epithelium from the meatus and the formation of cholesteatoma, which constitutes our chief indication for a mastoid operation, provided no symptoms of serious complication are present. We, of course, recognize now that a larger number of cases of chronic suppurative otitis media, where there may be periods of acute exacerbation of discharge associated with each fresh coryza, may not in themselves be any more dangerous to the individual than the attack of coryza, provided, of course, the disease is one that involves the mucous membrane alone and does not extend to the bony structure.

Dr. Andrews feared that the last statement might give the general practitioner too great a feeling of security in allowing cases of chronic suppurative otitis media under his care to run on indefinitely, employing local treatment. Chronic suppuration in the ear is far too serious to be taken lightly by the patient

or the practitioner, and it would be a mistake to allow the impression to go out that these cases are not serious.

Dr. Shambaugh did not wish to convey a wrong impression regarding the situation in these cases of chronic suppurative otitis media. The point he wished to express was simply this: that we are now able to make a rather sharp distinction between cases of chronic suppurative otitis media where the process is limited to the mucous membranes and those where the bone itself is involved. Whereas in the latter cases we recognize a process that may at any time lead to serious complication, in the former case where the process involves merely the mucous membrane, we do not fear any sudden complication. The statement made years ago by Dr. Wild, that in chronic suppurative otitis media we never can tell how, when or where the process may end, we restrict now to those cases where the process has invaded the temporal bone, and it is therefore in these cases where we are justified in advising a radical mastoid operation. So long as the disease does not extend beyond the mucous membrane of the middle ear no complication need be feared and no radical mastoid operation is justified. It is one of the triumphs of modern otology that to-day we are able to differentiate between these two classes of running ears.

#### CHICAGO MEDICAL SOCIETY

##### *Regular Meeting, Jan. 25, 1911*

A regular meeting of the Chicago Medical Society was held, Jan. 25, 1911, with the president, Dr. Alex. H. Ferguson in the chair. Dr. Clarence W. Leigh read a paper on "Carl Spengler's 'I. K.' Treatment in Tuberculosis."<sup>1</sup> Dr. Ernest Lackner read a paper on "Tuberculosis in Children." Dr. Hermann J. Achard exhibited and demonstrated various tuberculins. Edward Gudeman, Ph.D., read a paper on "Raw and Pasteurized Milk and Milk Serums."<sup>2</sup>

##### *Regular Meeting, Feb. 1, 1911*

A regular meeting of the Chicago Medical Society was held Feb. 1, 1911. In the absence of the president, Dr. Fletcher called the meeting to order. Dr. B. C. Corbus read a paper on "Observations on Twenty-Eight Cases Treated with the Ehrlich-Hata Remedy (Salvarsan)." Dr. Carl Wagner read a paper on "Ehrlich's 606."

#### DISCUSSION ON THE PAPERS OF DRs. CORBUS AND WAGNER

R. H. Herbst: From what we have heard this evening, from the voluminous literature on this subject, and from personal observations, I think most of us are well satisfied that salvarsan will occupy a high position in the future treatment of syphilis; however, I am just as well satisfied that it will not be used as a routine form of treatment. Admitting that the spirochetes promptly disappear after its use, also that the Wassermann reaction becomes negative quite early, and again that the manifestations of syphilis, especially mucous membrane lesions, disappear more promptly than we see with mercury, still these results are not permanent, and in order to make them so, this treatment will have to be supplemented by mercury.

After using this remedy we find that the spirochetes disappear from the lesions in twenty-four hours in some instances. This is remarkable; however, we must not forget that they have been known to disappear in forty-eight hours following a single injection of metallic mercury.

What is the significance of the negative Wassermann reaction in cases treated with salvarsan? Does it indicate that these patients are not actively syphilitic, or is it due to the presence of the arsenic preparation? I am satisfied that the latter is true in most cases, because I have repeatedly seen patients with marked recurrences give a negative Wassermann reaction. We see the same thing with mercurial treatment, viz., just as long as an individual is well saturated with mercury his Wassermann reaction will be negative, although he may be actively syphilitic.

1. For text of paper see p. 461.

2. For text of paper see p. 417.



In our early enthusiasm over some of the results obtained with salvarsan we must not forget the many marvelous results accomplished with our old methods of treatment. Few will question that salvarsan has a strong destructive action on the spirochetes, but does it destroy the few latent, dormant spirochetes we so frequently see producing the parasyphilides, after many years of apparent health? This is very doubtful, and that is why I would strongly urge that we supplement this treatment with mercury, knowing that mercury not only destroys the spirochetes, but also increases the defenses of the human organism, and it is this constant strengthening of the defenses, which ultimately takes care of the treacherous latent spirochetes.

I think that the indications for the use of salvarsan are as follows: in cases of early syphilis, when we are anxious to carry the patient over the so-called "highly contagious stage" as rapidly as possible, and again in cases of late syphilis, when an emergency action is required, but in every instance I strongly believe in supplementing this treatment with mercury and the iodids.

Archibald Church: My interest in this remedy concerns its application to the late manifestations of syphilis on the nervous system—locomotor ataxia, paralysis and other degenerative tendencies in the spinal cord.

It is particularly in these cases that salvarsan is said by some to be contraindicated, the opinion not being based upon facts, apparently, but growing out of the fear that it might have some ill effects on a nervous system presenting degenerative symptoms. As has been said here to-night, this fear is probably without foundation and I have not allowed it to govern me in my work.

I have now 27 cases of general paresis or combinations of tabes and paresis, locomotor ataxia, etc. They all showed positive Wassermann and the fact became established that there were positive or latent spirochetes in these patients. So the idea seems to be obtaining that there is some latent poisoning from these spirochetes, not enough to make it really active, but just enough to keep up a chronic poisoning, hence the value of any remedy which will stop it.

My hope in using salvarsan was not to do away with the atrophic condition in the spinal cord, but to put a stop to the poisoning and, if possible, bring the locomotor ataxia to a pause. The results are too recent to say that it is positive, but with Dr. Murphy, I have been able to give it in some presenting these latent manifestations. It is too long after the beginning treatment to give you a complete clinical history, but some few points may be of interest to you.

One gentleman came to me with locomotor ataxia. He was troubled with severe gastric crises so that he could not take three meals a day and had not been able to for a long time. Many days would sometimes pass without his being able to retain a single meal. Twenty months ago I saw him. He had an enlarged left pupil, lightning manifestations of pain in the lower limbs. He was sent home, of course, for mercury treatment because salvarsan was not then being exploited. (I say "exploited" advisedly, because you cannot say anything else with reference to a preparation which has been presented as this one has. Every time I take out a package and see the words "patent registered" in red letters it gives me a kind of chill. The price is cheap enough, I am sure, for a remedy of its value, but I do not hesitate to say that I cannot approve of the way in which it is presented.)

When the man came back last fall his left pupil was dilated ad-maximum; was stationary to light in all manifestations. I gave a dose of 60 c.c. of salvarsan. The next day the man took three square meals; and for seven consecutive days he took his meals regularly. Forty-eight hours later the pupil (dilated as described above) contracted down to the size of its fellow but still showed some difficulty in reacting to light. By the end of the week it widened slightly and has remained so ever since, but it is ever so much better than it was when I first saw it.

In another case the cramp in the abdomen was sometimes such that the contents of the bowel and bladder were extruded. In twenty-four hours this had all subsided and the clonus disappeared. He has been so liberated from the spas-



modity that he is able to walk about at home and on the streets. How permanent this will be, of course, it is entirely too soon to tell.

I had another case of a woman who was sent to me from the Mayo Brothers. In her case I found the Wassermann positive not only in her but in her husband. Her mind was so affected that she could not tell her age, her name, the names of her children or how many there were. The only thing she knew anything about were the objects under immediate observation. In four or five days after the introduction of salvarsan she could carry on a very reasonable conversation. How lasting this will be we can only speculate.

Another case: a man who some years ago presented incipient indications of general paresis. He improved somewhat upon mercury, got to the point where he could transact a little business, but did not get any better. He showed the Argyll pupil, both knee-jerks being absent. Now, ten days after his first injection he has both knee-jerks present, the Argyll pupils are not exactly that; they do respond in a slight degree to light.

Another instance is that of a young merchant who got rather out of sorts with his business. He presented a case of well-established paresis. Now he has regained his pupillary action and all his mental vagaries have disappeared.

These conditions, however, are so common that the sequence cannot be established until we have had them under observation for a much longer period.

I have seen some untoward results. In one case of locomotor ataxia, presenting blood and albumin in the urine (the majority of these cases have no albumin, so that the presence of albumin always alarms me), however, there was positively no discomfort at the site of the injection, which has been intra-muscular.

One case of tabes lost one eye and the other was so diseased that he was told he might go blind. The injection of salvarsan did not disturb his vision in any way, but it did disturb his heart very alarmingly. The pulse ran up to 140.

In one case of paresis the first injection gave him so much relief that he was anxious to have the second. The second produced such disturbance of the cardiac action that he has been on his back ever since!

In all of these patients, we must remember, we have individuals who are subject to nervous and cardiac accidents and I presume we shall get into trouble, but the great point is: have we here something with which we can stop the progress of tabes and general paresis in some cases?

I express the hope that it is so. I would not wish to be quoted as saying that it is so, but I hope it is; however, I do not believe my statistics are elaborate enough to give me any basis for an opinion, but I am optimistic and, as the poet Eugene Field says: "It is better to hope than doubt."

Jos. Zeisler: I wish to record myself as a thorough believer in the therapeutic efficiency of salvarsan. From what I have seen abroad and from my limited personal experience, in private practice, I may say that I have nothing to regret and a great deal to be thankful for. I have seen some effects which might be called almost marvelous: results which I have not at any time before, in a fairly long experience, been able to see accomplished with mercury or iodids.

A great deal has been said to-night, about the technic of the injection, and to some of you the complications and apparatus surrounding it, may mean unsurmountable difficulties. That the intravenous method will ever become popular with the profession at large, seems to be very improbable. This method means before all, hospital care, and therefore, is not practical at all times. Were all cases requiring salvarsan treatment placed in a hospital, there would be no room in all our hospitals for any other class of cases.

The original hope of a *sterilizatio magna*, a cure by one single injection, has long since been abandoned even by Ehrlich himself, who now speaks of two or three injections and also recommends other adjuvant treatment; under such circumstances, any plan which involves danger, which has repeatedly caused death, which is exceedingly complicated, cannot recommend itself for routine application.

What I have seen of the Wechselmann method is such that I do not believe I should ever use it. Two days ago, I saw a patient who had received such an

injection last September and who still has a lump on his back just like those shown here to-night, and I would rather warn you against that method.

I have repeatedly used, but always in a hospital, the alkaline solution. That method fulfills the indication of a rapid dissemination of the remedy; although when conditions should demand urgency we should select the intravenous method.

Subcutaneous injection of the solution is not very painful, not dangerous and usually as effective as the intravenous because it also means fairly quick absorption. There are, however, drawbacks to it. There is usually a rise in temperature and pain after the injection of the remedy. In one of my cases, there was persistent vomiting which lasted three days.

There has been nothing said here to-night of a form of injection which seems to me deserving of a word because I believe it will remove the remedy out of the hands of the privileged few and place it within the reach of the general practitioner. That is the method of injecting an oil emulsion. It is not quite original with me, having been used in one form or another by Kromayer, Levy, Bing and others. I have simplified it by using sterilized alboline as the vehicle. I have used a number of such injections and can safely say that the results have been very good—as good as I ever wish to see. When I say to you that in a case injected a few weeks ago in a medical student, who had an ulcerated chancre and an enormous inguinal bubo, the emulsion caused a healing over of the chancre in two days and a marked decrease of the glandular swelling, I am not stretching the truth. In another case with persistent mucous patches on the tongue, these disappeared promptly and after three weeks the patient is entirely free from any signs of lues.

Injection with this emulsion is perfectly painless. The patient has a slight uncomfortable feeling, but goes about as usual. I have given several of them in my office and, so far, have nothing to be sorry for. The medical student referred to, insisted upon having it that way because he did not wish to cause notoriety. The injection was given at my office and so good were the results that I have since repeated what first seemed somewhat bold in several instances. I believe it is the method which is destined to become popular.

As far as ultimate results are concerned, especially the prevention of nervous phenomena, it is impossible to predict anything as yet. I believe we have in salvarsan a very valuable remedy. Ehrlich to-day, over his signature, recommends its use in connection with mercury. He advises attacking the spirochetes from all possible points. Time only will show what the results will be. A discussion like the one to-night, is quite timely, and I believe it will be wise to have a discussion of this sort again in a year and then again in two years. Whether we shall give it a thought in five years from now, no one can tell.

Dr. Fletcher: For fear one of Dr. Church's remarks may be misunderstood I wish to say that I believe when we are dealing with a man's reputation who stands as high in his profession as does Ehrlich we should consider the matter from all sides before we pass judgment on what he has done. He patents his preparations because abroad it is ethical to do so. Had he not done so he would have been in danger of not being allowed to proceed. What income he gets from this he immediately turns over to his university. I have heard and read a great deal of criticism of Paul Ehrlich. It is a well-known fact that he is an infant in the ways of the world and I doubt very much if he cares for much more than enough to eat and a place to live.

Dr. O'Shea: I just wish to report one case which I had in December. Two years ago he had had a sunstroke from which he never fully recovered and I think it proved the foundation for his syphilis which followed. I took him to St. Luke's and it took us a week to make a diagnosis. I had given him Fowler's solution for two months before he went to the hospital. While he was there we gave him iodids and mercury intravenously. He was to be sent to the Detention Hospital at Dunning. I interceded for ten days longer. At the end of the ten days he was brought up again and I had another ten days added. He could not walk and had beginning tabes, and commencing tumor of the brain. I gave him

"606" three weeks ago. To-day he is out working, almost the same as he was three years ago.

I gave another injection last night with no rise in temperature resulting. Urine normal. I gave the injection in divided doses in four places in the back and this morning I could not find a single induration.

That was one of the most remarkable cases I have ever seen. I do not know how it will ultimately turn out, of course, but he was saved from the insane asylum for a time at least.

B. C. Corbus (closing the discussion on his part): One word about injection: I have from the first used the alkaline solution method. I know it is somewhat painful and I have no doubt but that Dr. Zeisler's method can be used more conveniently, but whether it is as efficient or not we are not able to judge at present. I have injected eight cases in my office. Four of them went into shock following the injection, but they were cases that were enemy and not in good physical condition. In one patient, it was given in the subscapular region. So severe was the shock in this patient that I thought he was going to pass away. I have only given it in the office at the entreaty of poor patients and still believe it is dangerous.

Dr. Carl Wagner (closing the discussion): In regard to office treatment with "606," I would like to say that Weintraut in Wiesbaden, as well as many others, give even the intravenous injection in the outdoor clinic and permit the patients to return home immediately and resume their work next day. While this may perhaps be done with impunity in most of the cases, I feel sure that we must be prepared for some unpleasant surprises, which latter was forcibly impressed upon my mind through an incident which happened during a recent visit of mine to the Rockefeller Institute. Dr. Swift, in charge of the syphilitic patients of the institute, gave a "606" injection to a strong, robust-looking man, 35 years of age, who showed neither nervousness nor any other symptoms indicative of any special danger. The injection was given into the lumbar region which Melzer, of the Physiological Laboratory of the Rockefeller Institute, had demonstrated through very ingenious experiments, to be the region of quickest absorption; immediately after the injection the patient went into profound collapse and came out of it only after hard work about the same way as persons with epileptic conditions wake up from an epileptic seizure. This repeated itself three times after which the patient, quite feeble and covered with perspiration, regained full consciousness, but complained of very severe pain radiating from the point of injection in the lumbar region down through the hypogastric region into the left testicle. In regard to the position which the iodids, mercury and "606" hold respectively to syphilis, especially to the more inveterate forms, I believe that mercury and "606" are the real active agents which kill the syphilitic cause, while iodid, just the same as fibrolysin, simply opens the doors of the resistant foci for the lymphatic and blood current to convey these agents into them.

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## JACKSON COUNTY

The January meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club at Murphysboro Thursday, Jan. 19, 1911. Members present: Drs. Carter, Sabine, Ormsby, Horstman, Grizzell, Molz, Riseling and Essick, of Murphysboro, and Dr. McAnally, Carbondale; visitors: Dr. J. L. Wiggins, E. St. Louis, Ill. Dr. J. L. Wiggins read a very interesting paper on some of the "Errors in Surgical Diagnosis of Abdominal Disorders." The paper was freely discussed by all present. Dr. C. E. Riseling reported two cases of tetanus that had been under his care. Both were discussed by those present. Dr. Wiggins was tendered a rising vote of thanks by the society.

Adjourned.

RAY B. ESSICK, Sec.-Treas.



### LAKE COUNTY

The meeting of the Lake County Medical Society was held in the audience room of the library, Waukegan, Ill., March 20, 1911. The chair was occupied by the president, Dr. M. E. Fuller.

A most interesting address was given by Dr. Sidney D. Wilgus, superintendent of the Hospital for the Insane, Elgin, Ill., on the subject "Management of Hospitals for the Insane." The paper was a most careful review of the résumé of hospital management dealing with the methods of handling departments, the difficulties met with, and asked for the cooperation of the taxpayers in bringing about better conditions. Two facts were brought out which was a revelation to the members of the county society. These were: (1) the fact that the institution, as are all other like institutions of the state, is extremely overcrowded; (2) that the state appropriation is inadequate to supply the best services. Not only is the entire corps of employees changed every year but an inferior class of employees is obtainable with such salaries as are offered. A vote of thanks was given Dr. Wilgus for his most able paper which was freely discussed by the members present.

It was moved, seconded and carried that Dr. Wilgus' paper be published in the local papers as a matter of education to the public. Dr. Wilgus then left to catch the train to Chicago.

The minutes of the last meeting were read and approved. The applications of Drs. George M. Billmeyer of Zion City, M. Herschleder, Waukegan, and C. W. Talbot of Lake Villa, all having been approved by the board of censors, were voted on by the society and they were unanimously elected as members.

Dr. W. H. Watterson was chosen as delegate to the State Medical Society and Dr. J. C. Foley as alternate. It was suggested that all the members of the society that possibly could attend the state meeting at Aurora May 16, 17 and 18 in accordance with the kind invitation sent by the Fox River Valley Medical Society, which was read.

The chair then appointed as the board of censors for the coming year Drs. L. H. Tombaugh, W. S. Bellows and F. L. Gourley.

The matter of House Bill No. 380 concerning the recognition of osteopathic medical colleges was then taken up for consideration and it was voted that the secretary register the protest of the society against this bill to their member of the Judiciary Committee, the Hon. Edward D. Shurtleff.

The matter of amount of the dues for the year then came up and because of the entertaining of some neighboring societies at the next meeting it was voted that the dues for this year be \$5.

A committee on entertainment to arrange for the next meeting was then appointed by the chair. They were Drs. C. E. Daniels, W. C. Bouton, Frederick Ludwig, H. B. Roberts, Martin E. Fuller, J. A. Turner and L. H. Tombaugh.

The matter of asking for an appropriation of \$100,000 from the state for equipment of the medical department of the University of Illinois was then taken up and it was voted that the secretary be instructed to register the endorsement of the society on this measure.

Those present were: Drs. Fuller, Bellows, Foley, Kalowsky, Gourley, Gavin, Daniels, Ludwig, A. O. Wright, Turner, H. B. Roberts, Tombaugh, Bouton, Jolley, Holm, N. J. Roberts and Watterson, besides several invited guests including Supervisor Conrad and City Attorney Orvis. Adjourned.

W. H. WATTERSON, Secretary.

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### MADISON COUNTY

The Madison County Medical Society met in the Washington Theater in Granite City March 3, 1911. In the absence of the president, Dr. E. C. Ferguson, vice-president, presided. The following members were present: Drs. Hastings, Zoller, Johnson, J. W. Scott, Barnsback, Threadgill, Sims, Dorr, Kerchner, Harrison, Yerkes, Burroughs, Luster, Theodoreff, Hirsch, Ferguson, W. H. Grayson,



Wedig, Schroeder, Seebold, Schreifels, Riley, R. B. Scott, Kiser, Cowan, Everett, Tulley, Gwynn, Pfeifferberger, Spitze, Binney and E. W. Fiegenbaum. A resolution endorsing the movement to ask the legislature for an annual appropriation of \$100,000 for the Medical Department of the Illinois State University was read and unanimously adopted, and the chair appointed the following committee to assist in presenting this matter to the state legislature: Drs. Fiegenbaum, Yerkes, Harrison, Everett and Tulley.

Dr. R. D. Luster of Granite City, read a paper on "The Value of the X-ray in Diagnosis." It was a very interesting paper showing the various uses of this agent in making diagnoses, both in a medical and surgical way. The paper bore evidence of considerable study and was highly appreciated by all. The discussion was opened by Dr. Zoller and continued by Drs. Ferguson and Harrison. The whole theme was finely illustrated by large stereopticon pictures, making altogether a very valuable contribution to the work done very recently by this society. On motion it was decided to hold our next meeting at Edwardsville on April 7, 1911.

E. W. FIEGENBAUM, Sec'y.

### M'LEAN COUNTY

The McLean County Medical Society met Feb. 2, 1911, at the City Hall, Bloomington; Dr. E. Mammen, president, in the chair. After a favorable ballot on two new members and other routine business, the secretary read for the edification for those present a report he had prepared as district councilor, showing present membership, 72; gain 5; no removals and no deaths. A letter from some members living outside of Illinois was read, inquiring whether they would be required to pay \$3.50 total yearly dues. In answer the following resolution was introduced and carried: That members outside of Illinois be required to pay the same dues. A motion also prevailed to appoint a committee of three to frame a by-law applying to outside members. The essayist of the evening being absent reports of cases were in order.

Dr. E. L. Brown reported the following case: On March 16 I was called to see a patient with severe pain over gall-bladder. He had a slight fever, was a little jaundiced, had severe pain and sweat freely. I saw him three times that day and then he was so much better he said I need not come next morning. April 13, a month later, I was again called and found an abscess under or over the liver, it was hard to tell which was the original seat of the trouble. Patient was in great pain, fever very high, sweating septic; consultant declined to operate as the case seemed hopeless. In a few days when in pain patient began to cough up a great quantity of pus of putrid odor so strong that others could not stay in the room. After that the patient began to improve and was able to come to my office May 25. In June and July he was pretty well, but August 24 the abscess under liver reappeared and patient went to hospital for operation by Dr. Noble whose reports are as follows:

Patient was seen August 23, 1910, and sent to St. Joseph's Hospital, where, Aug. 25, 1910, he was laparotomized. An incision one inch to the right of the median line, one inch below the right costal border was made, through which access was had to a cavity, which on the median side was walled off from the general peritoneal cavity by adherent intestine. The cavity in which we entered, was found to extend up under the liver to the diaphragm and contained pus and necrotic material. Its protection wall to the median side was not disturbed. Three drains were inserted and the abdominal wall closed with exception of the drain exits. The wound drained freely for about six days, at the end of which time all drains had been removed. At the end of two weeks the patient left the hospital, the central drain exit still discharging slightly.

September 29, or about four weeks following the first operation the wound was entirely healed. Between that time and Oct. 14, 1910, the patient came to the office at irregular intervals, reporting himself in good condition. October 14, he came in complaining of some pain in the right abdominal region. October 19,

there was a pronounced bulging in the lower half of the wound area and he was sent to St. Joseph's Hospital, where, October 20, he submitted to a second laparotomy. Upon opening the abdomen through the site of the original incision, we came upon necrotic intestine involving the head of the cecum and about four feet of the ileum. Owing to the extensive necrosis, the extensive adhesions, and the serious condition of the patient under anesthesia, it was decided best not to attempt an intestinal anastomosis at this time. So the cecum was attached to the upper angle of the wound and the ileum in the lower angle of the wound, leaving a fistula at this point. Eleven days following this operation, October 31, a third laparotomy was undertaken to close the fecal fistula. An incision was made one inch to the median side of the original incision, through which the free end of the resected cecum and the free end of the resected ileum were dissected out from a mass of adhesions and brought into the opening and united by means of a Murphy button, and the incision was closed in layers. Drainage was inserted through the original incision. Four weeks following this operation the Murphy button was removed by means of a forcep from the rectum. Eight weeks following this last operation both wounds were entirely healed and the patient left the hospital. At this date, Feb. 2, 1911, the patient has regained his normal weight, 180 lbs., and he says he is perfectly well. All the functions are normal and he has returned to work.

Dr. E. Mammen reported a case of operation for tic douloureux or trigeminal neuralgia in a patient, a lady aged 58 years, who was an intense sufferer for a year and a half, and who is completely relieved by the operation. This procedure is applicable only to cases where the middle or infraorbital branch alone is involved. The incision is made above the zygomatic arch from the outer angle of the eyebrow downward and backward, then at an obtuse angle upward and backward. It is carried through the skin and fascia, the muscular fascia being divided about one-half inch above the zygoma. This bony arch is then cut through posteriorly near its temporal terminus, and anteriorly near its junction with the superior maxillary bone. The temporal muscle is then pushed aside and the dissection continued inward until the base of the pterygoid process is reached, where the foramen rotundum permits exit of the middle branch of this nerve. This is then hooked up, seized with forceps and twisted out. He reported another case like this one done over two years ago in which relief continues to be complete. This operation is much less severe than that of removal of the Gasserian ganglion. The latter should be resorted to only when all three branches of the nerve are involved.

Dr. Young reports a case of tic improved by thermal electric treatment. Dr. Fulwiler reports improvement of case by continued use of coniin.

Dr. Sloan reported a routine examination of all laparotomies for gall-stones.

Dr. Mammen says they are found in 25 per cent. of all post-mortems. Most of these had had no symptoms of their presence.

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### MORGAN COUNTY

The regular meeting was held March 9, at the Public Library building at 8 p. m., with Dr. H. C. Woltman presiding. The following members were present: Drs. Black, Adams, Bowe, Treadway, Cole, Campbell, Baxter, Ogram, Reid, Metcalf, Hairgrove, Norris, Gailey, Hinton, Woltman, Leonard, Stacy, Hardesty and Gregory. Resolutions endorsing the request of the trustees of the University of Illinois in asking the legislature for a sum of \$100,000 per year for the equipment, maintenance and extension of its Medical School, were adopted unanimously and the president appointed Drs. Bowe, Adams, Stacy, Ogram and Leonard a committee of five to present the sentiments of the society to the legislature.

Resolutions recently adopted by the Williams County Medical Society were read and on motion of Dr. Black, they were referred to the legislative committee with power to act. Dr. Black moved that a committee of three be appointed to secure for the society, without incurring any expense upon the Society's treasury.

an expert sanitary inspection of the water condition north of the city. On second of Dr. Cole, the motion carried unanimously and the president appointed Drs. Black, Pitner and Hairgrove to secure such an inspection.

Dr. Adams spoke briefly on the Optometry Bill now pending before the legislature and moved the adoption of the following resolution:

"Believing that the passing of the proposed Optometry Bill now before the legislature of Illinois would result in ultimate injury to the health of the citizens of the State and would lower the standards of medical practice; therefore be it

*Resolved*, That we, the members of the Morgan County Medical Society, protest the passage of the Optometry Bill, viz., Senate Bill No. 140, and recommend that copies of this resolution be sent to the Senator and Representatives of this District."

On second by Dr. Bowe, the resolution was adopted unanimously.

The paper of the evening was read by Dr. Walter L. Treadway, the subject being "The Mixed Phase of Manic Depressive Insanity With Studies in Four Cases." Discussion opened by Drs. Hinton and Bowe. Adjourned.

A. R. GREGORY, Secretary.

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### ROCK ISLAND COUNTY.

The regular meeting of the Rock Island County Medical Society was held at the New Harper Hotel, Rock Island, Tuesday evening, Dec. 13, 1910. After dinner the business session was held. Dr. Eddy presided in the absence of president Bennett. The minutes of the October meeting were read and approved. The bill of the Manufacturers' Hotel for \$31 was allowed and ordered paid. The application for membership of Dr. J. P. McManus, Rock Island, was read and laid over until the next meeting. Drs. Lachner, Dart and Seids were appointed as a committee on Dr. McManus' application. The secretary read a statement from the State Board of Health regarding the Supreme court's decision on the Itinerant Venders Act, declaring it in part valid and constitutional.

Dr. Geo. E. Decker of Davenport, Iowa, member of the Iowa State Board of Health then read a paper on "Anterior Poliomyelitis." The paper was very timely and instructive because of the national as well as local prevalence of this disease. The new facts regarding its epidemiology were well brought out. The paper was discussed by Drs. C. O. Bernhardt, Dart, Sala, Lamping, Craig, Sr., and Mueller. Dr. Craig, Sr., made a motion that a vote of thanks be given Dr. Decker and that the secretary endeavor to have the paper published in the *Journal of the American Medical Association*. Carried. The meeting then adjourned. Present: Drs. Ludewig, C. O. Bernhardt, Eyster, Hollowbush, Dart, Craig, Sr., Craig, Jr., Norman, Wright, McManus, First, Sala, Souders, Dailey, Chapman, Foster Lamping, Eddy, Ostrom, Williams, Seids and Mueller. Guests: Drs. Geo. E. and H. M. Decker of Davenport, Ia.

ALBERT N. MUELLER, M.D., Sec.

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### SANGAMON COUNTY.

The Sangamon County Medical Society held its regular monthly meeting at Lincoln Library, March 13, 1911, President C. F. Stericker presiding at the meeting. The minutes of the previous meeting were read and approved.

Revision of fee-bill came up for discussion. No member of this committee being present, Dr. G. N. Kreider moved that the committee be given more time to prepare report. Carried. Dr. Wm. H. Holmes, on motion of Dr. T. H. D. Griffiths, was given a transfer card to Kankakee County Medical Society. The Williamson County Medical Society's letter of March 2 was read, asking this society to adopt the same or similar resolutions to those adopted by that society, relative to bills now pending in the State Legislature, pertaining to the practice of medicine. Dr. G. N. Kreider at the special meeting of March 7, 1911, was requested by the society to draft resolutions covering the proposed legislation; and these were



read by Dr. Kreider. Dr. T. H. D. Griffiths moved that Dr. Kreider's resolutions be printed and sent to each member of the society. Carried. The resolutions drafted by the trustees of the University of Illinois and sent this society for their consideration, were read. Dr. H. T. Morrison, Jr., moved same be adopted by this society. Carried. Bills to the amount of \$34.85 were read. Dr. Kreider moved that bills be allowed. Carried.

### ST. CLAIR COUNTY.

The St. Clair County Medical Society held a regular quarterly meeting at the Belleville City Hall on the afternoon of Jan. 5, 1911. The report of the treasurer was approved. Officers were elected as follows: President, Charles S. Skaggs, East St. Louis; vice-president, G. C. Otrich, Belleville; secretary, Carl A. W. Zimmermann, East St. Louis; treasurer, H. A. Hansing, Belleville. On the board of censors were appointed Drs. W. E. Wiatt, J. Rendelman and Gunn, Sr. On the programme committee were appointed, Drs. G. C. Otrich, E. P. Raab and J. Twitchel.

Dr. F. L. Evans read a paper entitled: "A Report of Two Cases of Cancer Treated with the Vaughn Cancer Residue." The paper was thoroughly scientific and was discussed by Drs. Fairbrother, Wiggins, Lillie, Miller and Zimmermann. Dr. G. C. Otrich read a paper on "The Value of the Laboratory as an Aid to Physical Diagnosis," which was warmly discussed by Drs. Wiggins, Fairbrother, Lillie and Miller. Dr. Wiggins then moved that a special meeting of the Society be called for the latter part of February at the Elks' Club at East St. Louis, in order to make the acquaintance of the State President; and that Dr. Cotton be asked to read a paper on a subject of his own choosing. The motion carried unanimously. Dr. Hilgard read a letter from the St. Louis City Hospital Alumni Association, in which the wish was expressed to have a joint meeting of the two societies at some future date. The secretary was instructed to correspond with the secretary of the St. Louis society, relative to arranging a suitable date. Members present: Drs. Miller, Otrich, Wiggins, Duey, Skaggs, Cables, Gunn, W. E. Wiatt, W. S. Wiatt, Hansing, Lillie, Fairbrother, Evans, Lippert, Hilgard, Wangelin, Starkle, Caldwell, Rayhill, Huggins, Dew, Rendelman, Raab.

After the meeting all members adjourned to a near-by café and had supper.

#### *Special Meeting, Feb. 23, 1911*

On Thursday, Feb. 23, 1911, the St. Clair County Medical Society held a special meeting in East St. Louis at the Elks' club rooms, with Dr. A. C. Cotton, president of the Illinois State Medical Society, as guest of honor. The meeting was called to order by Dr. Skaggs at 4 p. m. Dr. Cotton having been introduced, read a voluminous paper on "Acute Poliomyelitis." The paper considered the more extensive epidemics of acute poliomyelitis which occurred in the past four years; it also took into account the experimental pathology which has been carried on both here and abroad.

Dr. H. A. Cables opened the discussion and showed a great familiarity with the modern literature on the subject. Drs. Wiggins, Lillie, Fairbrother and Zimmermann also discussed the paper which was thoroughly appreciated by all present. After the scientific program, a sumptuous supper was partaken of in the Elks' dining room. This over, Dr. Cotton was given an opportunity to be greeted by the members individually, and in due time was escorted to his train. Nor should it be forgotten that a rising vote of thanks was tendered the essayist after he had closed his paper. Those present were: Drs. Otrich, Hilgard, Skaggs, Culbertson, Bottom, Butler, Eisele, McQuillan, Cannady, Ressel, Wiggins, Fulgham, Campbell, Lillie, Harney, Lippert, Smith, Cables, Hill, Stewart, Fairbrother, Caldwell, Spannagel, Adams, W. S. Wiatt, C. F. Wilhelmj, LeGrande, R. A. Twitchel, Rendelman, U. S. Short, Evans, L. B. Short, Enewitz, Mesirow, Lane, Zimmermann.

CARL A. W. ZIMMERMANN, Sec'y.



## STEPHENSON COUNTY

The annual meeting of the Stephenson County Medical Society was held at the Court House in Freeport, Tuesday, Jan. 26, 1911. President A. E. Smith presiding. Minutes of the previous meeting were approved as read. The following answered to roll call. Drs. Hewetson, Karcher, Mease, Phillips, Stealy, Thompson, Smith, Hayes, Rosensteil, and Clark. The report of the treasurer showed our membership all in good standing and a very neat sum in the treasury. The election of officers for the ensuing year resulted as follows: President, Dr. D. C. L. Mease; vice-president, Dr. J. H. Stealy; treasurer, Dr. N. C. Phillips; secretary, Dr. J. S. Clark; censor, Dr. Sarah E. Hewetson; delegate to state meeting, Dr. D. C. L. Mease; alternate to state meeting, Dr. W. L. Karcher.

The name of Dr. C. F. M. Butterfield of Rock City being favorably reported on by the board of censors, he was elected to membership in the society. Dr. J. H. Stealy brought up the subject of trained nurses for St. Francis Hospital. The hospital is a modern institution in all respects excepting for the lack of a proper system of nursing and dietetics. It was moved and seconded that the chair appoint a committee of three to draw up a petition and circulate it among the physicians of the city for their signature, requesting that the management of the hospital inaugurate an up-to-date system of dietetics and nursing in keeping with that of the best hospitals in the country. The committee appointed was: Drs. Stealy, Smith and Leavy.

Dr. N. C. Phillips read a paper on "Drug House Therapy." The doctor's remarks seemed to be quite apropos. J. SHELDON CLARK, Secretary.

## WHITE COUNTY

The White County Medical Association met in Carmi at the offices of Drs. Lehman and Niess, Feb. 28, 1911. In the absence of President C. B. Staley, Vice-President J. L. Lehman presided. On roll call the following members were present: Drs. Lehman, Niess, Sibley, Johnson, Ellis, Boyer, Leslie, Keagy. No program having been prepared, the following business was transacted. Report of committee on fee-bills was read by the secretary. After discussion, a motion was made by Dr. Sibley, that if the majority of doctors of White County sign fee-bill it should become effective. Carried. The election of officers for 1911 resulted as follows: president, Dr. C. S. Keagy of Grayville; vice-president, J. A. Boyer, Carmi; secretary and treasurer, Dr. J. Niess, Carmi; delegate to Illinois state medical meeting May 17, 18, 19, Dr. F. Sibley; alternate, Dr. F. Leslie. Program committee appointed by chairman: Drs. Sibley, Boyer, Ellis. Motion made by Dr. Sibley to adopt resolutions in remembrance of the deceased brother, Doctor Waddle, and that a copy be sent to the home and one copy be spread on the records of White County Medical Association. Committee appointed: Drs. Boyer, Johnson and Sibley. Adjourned. J. NIESS, Secretary.

## NEWS OF THE STATE

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### PERSONAL

Dr. A. J. Foster has removed from Peoria to Segure, La.

Dr. G. D. Lockie of Pontiac has moved to Springfield, Ill.

Dr. Dallas B. Phemister, Chicago, has returned from Europe.

Dr. J. N. Shearl has removed from Urbana to Middletown, Ill.

Dr. Henry Hart has removed from Quincy, Ill., to Medford, Ore.

Dr. F. E. Tulley is the newly elected president of the Granite City Commercial Club.

Dr. E. G. Merwin of Highland was appointed county physician of Helvetia township.

Dr. A. B. Middleton, who has spent the winter in Florida, has resumed his practice at Pontiac.

Dr. J. R. Farthing of Marine was appointed medical director of the Midland Casualty Company, of Chicago.

Dr. Katherine B. Rich has been appointed assistant city physician of Chicago and began her duties February 24.

There is a good opening for an active, up-to-date physician in Maryville, Mitchell and Grantfork, Madison County.

Dr. F. E. Glauner of Decatur has removed to Marine, where he will practice in connection with Dr. J. R. Farthing.

Dr. J. M. Threadgill of New Douglas was thrown from his horse January 30 and sustained a fracture of his arm.

Dr. Guy G. Dowdall, Chicago, has been appointed chief surgeon of the Illinois Central System, vice Dr. John E. Owens.

Dr. William A. Peterson has removed from Thirty-First Street and Wentworth Avenue, Chicago, to 5039 Winthrop Avenue.

Dr. B. Brindley Eads, who was operated on at Presbyterian Hospital, Chicago, March 6, is making satisfactory progress toward recovery.

Dr. Rose A. Russell, former superintendent of the Granite City Hospital, has accepted a position in the state hospital in Cherokee, Iowa.

Fire at Abington, March 11, destroyed the office equipments of Drs. Charles F. and Edward H. Bradway, the loss being estimated at \$1,000.

Dr. Lucinda H. Carr, Carlinville, was awarded \$1,000 in her suit for damages against the Chicago and Alton Railway for injuries received in a wreck.

A jury in the municipal court, Chicago, on March 14, is said to have returned a verdict assessing a fine of \$200 against Mrs. M. Selike, a Milwaukee Avenue healer.

Dr. Paschall N. Bowman, Springfield, charged with manslaughter, is said to have been freed from the charge February 27, and committed to the Jacksonville State Hospital.

Dr. Barret B. Griffiths, Springfield, who has been in Colorado Springs for several months on account of ill health, reports that he is slowly recovering from an injury to his foot.

Dr. William H. Holmes, Springfield, state bacteriologist, has resigned to enter the service of the State Board of Administration as assistant physician at the Kankakee State Hospital.

Dr. S. Dahl, Chicago, while attempting to get into a moving elevator at the Norwegian Lutheran Deaconesses Home and Hospital March 14, fell and sustained a compound fracture of the right leg.

Dr. Reinhard Rembe, formerly of Bloomington and of recent years specialist in Chicago, has received the appointment of professor of diseases of the eye, ear, nose and throat in the hospital and college at Manila, Philippine Islands. Dr. Rembe has sent farewell announcements to his friends in Chicago and will shortly sail to take up his duties in Manila.

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## NEWS

—In the state tax levy for 1911 is included an item of \$442,184.64 for the Municipal Tuberculosis Sanatorium.

—The President has sent to the senate the nomination of sixty-seven more physicians of Chicago as first lieutenants of the Medical Reserve Corps.

—Dr. Benjamin Gleason, wife and children of Danville, Ill., sailed March 31, 1911, for several months' stay in Europe, visiting clinics in Berlin, Vienna and London.

—The Sisters of Mercy, Aurora, announce that they have purchased the Ryburn Flats, with the surrounding property, for \$18,000 and will establish a maternity hospital to be known as St. Joseph's Infirmary.

—The John Warner Hospital, Clinton, is open for the reception of medical and clinical cases. Patients entering the hospital will be under the control of their own physicians as the hospital has no attending staff.

—Fifteen of the eighteen members of the medical staff of Oak Park hospital resigned March 3, the cause assigned being the interference with the duties of the staff by the Sisters of Misericordia, who are in charge of the hospital.

—As a result, it is said, of disloyalty and insubordination on the part of members of the staff of Mary Thompson Hospital seven members have been dismissed. The physicians in question claim that the trouble lies in the appointment of a lay superintendent, and the overbearing treatment of the physicians by the superintendent.

—The Council of the Chicago Medical Society at a meeting, February 14, unanimously adopted resolutions endorsing the request of the trustees of the University of Illinois for an annual appropriation of \$100,000 for the equipment, maintenance and extension of the medical school, and appointed a committee to assist in presenting the matter to the legislature and the governor.

—The third meeting of the Society of Medical History of Chicago was held February 24, when Dr. O. B. Will, Peoria, the guest of honor, delivered an address on "A Chapter on the Pioneer Period of Medicine in Illinois," which appears on page 399. Preceding the meeting there was an informal exhibition of autographic material, participated in by many members of the society.

—The common council have decided to add the fund of \$75,000 bequeathed to the city by the late Mrs. Anna C. Durand for the establishment of a public bath house to another fund, the combined fund amounting to about \$200,000, to be used for the construction of a hospital for the treatment of contagious diseases, and an arrangement has been made with the trustees of the McCormick Memorial Institute for Infectious Diseases whereby that institution will meet any expense of maintenance not covered by the Durand endowment fund.

—Senate Bill 235, introduced February 23 at the instance of the State Board of Health, provides that when a medical college has a five years' course, the fifth year clinical, its students may be admitted to examination at the end of the fourth year and if they pass may receive a limited license good for eighteen months entitling them to practice in a hospital. On graduation the student will receive a permanent license without further examination. The bill also aims to give the State Board of Health jurisdiction in the matter of revocation of certificates over all issued since 1877.

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### MEDICAL SOCIETY NOTES

—The Williamson County Medical Society, at a special meeting held for the purpose, February 28, passed resolutions commending the American Medical Association for its services in elevating American medical standards of preliminary education and of medical practice. The preambles recite that there are many unnecessary medical colleges which are run for commercial purposes, and that because of competition between these colleges many incompetent and even illiterate physicians are graduated; and that these factors together with commercialism in professorships and lack of stringency in examinations are causing harm to the general practitioner, without any benefit to the public.

—The following resolutions were submitted by Dr. Henry F. Lewis at the meeting of the Council of the Chicago Medical Society held February 14 and were favorably acted on:

WHEREAS, Certain members of the Chicago Medical Society have appeared in the public press in a manner suggestive of flagrant advertising; and

WHEREAS, Press publicity, which even the casual reader must construe as advertising, is a serious breach of professional ethics as prescribed by the American Medical Association; and

WHEREAS, The recipients of such publicity have disclaimed, and with apparent truth, responsibility for the same; be it

*Resolved*, That, in the opinion of the Council of the Chicago Medical Society, it is the duty of the recipients of such publicity as may be construed as adver-



tising pure and simple, to take steps to protect themselves and the profession from such compromising newspaper mention; and be it further

*Resolved*, That the gentlemen, whose cases have just been considered by this Council, should advise the press of this city of the injury to the profession and to themselves resulting from the publication of methods of operation and real or supposed medical or surgical discoveries, and request the press not to use without authority their names in connection with such matters; and be it further

*Resolved*, That, in the opinion of this Council, reporters should be excluded from all meetings of medical societies during the consideration of all strictly scientific matters, except those bearing on sanitation, public policy, hygiene or sociology, and that steps should be immediately taken to enforce this rule; and be it further

*Resolved*, That an abstract of all papers read before this Society, which shall come within the range of subjects considered by this society as proper for publication in the public press, be placed in the hands of the secretary before or at the meeting at which they are read, to be given by him to the press, providing that this shall in no way abrogate the right of the authors to themselves assume the responsibility of placing such matters in the hands of the press; and be it further

*Resolved*, That a copy of this preamble and resolutions be published in *The Bulletin* and given for publication in the journals of the Illinois State Medical Society and the American Medical Association.

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### NEW INCORPORATION

—Golden Cross Medical Dispensary, Chicago; furnish free medical, surgical and dental services; incorporators, William Blanchard, Anton Samuel and Joseph Subaitis.

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### MARRIAGES

HENRY FRANCIS BALLARD, M.D., to Miss Louise Myers, both of Chenoa, Ill., February 22.

GEORGIANA MARGARET DVORAK, M.D., and John Joseph Theobald, both of Chicago, Oct. 29, 1910.

HARRY WILLIAM ACKERMANN, M.D., Rockford, Ill., to Miss Maud Goodspeed of Elgin, Ill., February 21.

HARRY WILLIAM ACKERMANN, M.D., Rockford, Ill., to Miss Maud Goodspeed of Elgin, Ill., February 21.

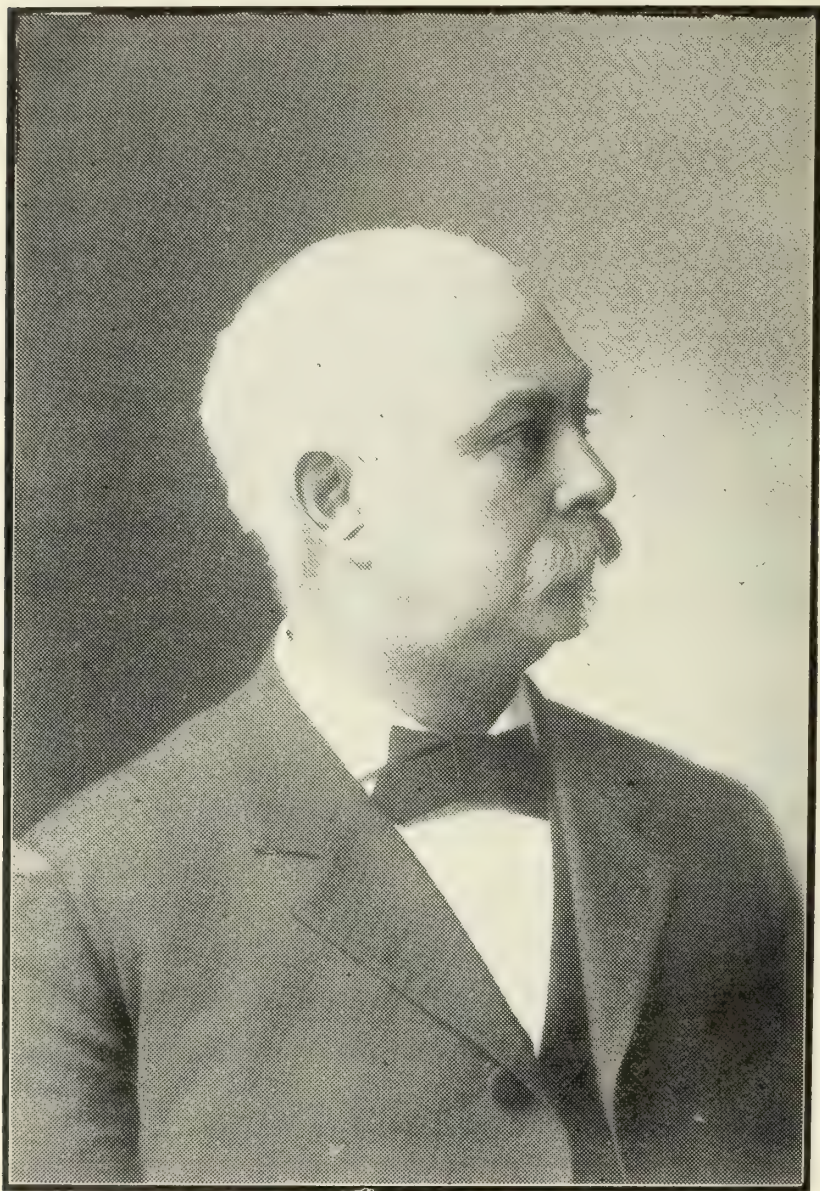
JOHN STEPHEN NAGEL, M.D., Chicago, to Miss Evelyn Morrison Robinson of New York City, March 7.

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### OBITUARY

DR. G. G. CRAIG of Rock Island died March 12, 1911, of pneumonia, after a five days' illness. Dr. Craig's death removes one of the older members of the Illinois State Medical Society, and a veteran of the Civil War. He was born in Westmoreland County, Pa., Oct. 26, 1843, and enlisted for the war when only 17 years of age. He was wounded in battle twice in 1865; graduated from Jefferson Medical College in 1869; and located in Rock Island the same year. He was appointed surgeon of the Rock

Island Post in 1889, and retained this position until the time of his death notwithstanding the reorganization of the army medical department in 1908. Soon after his location in Rock Island Dr. Craig secured a large



G. G. CRAIG, M.D.

practice and in 1881 was appointed Commissioner of Health. He at once began active work, and was the pioneer commissioner of civic cleanliness in the smaller cities of Illinois. Compulsory vaccination, a complete garbage system and sewage system were inaugurated by Dr. Craig's activ-

ity. He was also active in cleaning up the disgracefully dirty slaughter-houses which were in use. The funeral services were held March 15, and the sermon by Rev. George B. Smith of St. Paul, Minn., was a touching tribute to Dr. Craig, the medical profession, and the old soldier. Pastor Smith had served in the war with Dr. Craig. The city council, the Broadway brotherhood, and other organizations have paid deserving tributes to his memory. Drs. Craig, Carter and Bernhardt founded in 1896 a sanitarium in Rock Island, which continued for ten years. He had been president of the Rock Island County Medical Society and the Illinois and Iowa Central District Medical Association. Dr. G. G. Craig, Jr., and Miss Nellie are left to mourn his loss.

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### DEATHS

THOMAS L. FOULDS, M.D., a resident of Alton, Ill., for twenty-eight years; died at his home in Alton, March 7, 1911, aged 57.

JOEL ALLEN, M.D., one of Livingston County's oldest physicians, died at his home in Pontiac, March 11, aged 82.

CONSTANTINE H. MURPHY, M.D., Washington University, St. Louis, 1854; died at his home in Chesterfield, Ill., Feb. 13, 1911, from heart disease, aged 83.

JOHN BIGGS STANDLEE, M.D., American Medical College, Eclectic, St. Louis, 1904; died at his home in Peoria, Ill., February 17, from tuberculosis, aged 33.

MARIA STEWART LOUGHBOROUGH EDWARDS, M.D., American Medical Missionary College, Chicago, 1899; formerly of Moline, Ill., died in St. Helena, Cal., February 28.

HENRY J. WEYL, M.D., Eclectic Medical Institute, Cincinnati, 1875; a veteran of the Civil War; died at his home in Decatur, Ill., February 23, from prostatic hemorrhage, aged 75.

WILLIAM B. HART, M.D., University of Buffalo, N. Y., about 1846; for nearly sixty years a practitioner of McHenry County, Ill.; died at his home in Greenwood, February 19, aged 99.

FRANK J. MASCHEK, M.D., Rush Medical College, 1882; formerly a member of the American Medical Association; died at his home in Chicago, February 10, from cancer of the tongue, aged 50.

CHARLES AUSTIN JENNINGS, M.D., Starling Medical College, Columbus, Ohio, 1889; formerly of Delavan, Ill.; died at the home of his aunt near Olathe, Kansas, Feb. 21, 1911, from tuberculosis, aged 43.

THEODORE BACMEISTER, M.D., Homeopathic Medical College of Pennsylvania, Philadelphia, 1856; a pioneer practitioner of Central Illinois; professor of materia medica and therapeutics in Hahnemann Medical College, Chicago, 1869 and 1870; died suddenly at his home in Toulon, Ill., March 8, from angina pectoris, aged 63.

DR. COLUMBUS V. MASSEY, 545 Belmont Avenue, Chicago, died Tuesday, March 21, 1911, aged 62 years. Dr. Massey practiced for many years at Athens, Menard County, and went to Chicago about 1890. He



was a man of a great deal of common sense and was highly esteemed both in his country practice and later in the metropolis.

DR. W. B. OUTTEN of St. Louis died March 18, 1911, after a short illness, aged 66 years. Dr. Outten was well known in Illinois, being for several years chief surgeon of the Wabash Railway. In 1885 he established the Wabash Hospital at Springfield, and his duties brought him in contact with many medical men connected with the Wabash System.

DR. WILLIAM K. MATHUS died at his home in Williamsville, March 22, 1911, of apoplexy, aged 86. Dr. Mathus was born near Allentown, Lehigh County, Pa., April 17, 1824. He received his early education in the schools of Pennsylvania, later studying medicine in St. Louis, then practicing in Springfield, Ill. In 1856 he located in Williamsville, where he practiced his profession for many years.

W. P. PEIRCE, M.D., of Hoopeston, died March, 1911. Dr. Peirce had resided in a number of cities in Illinois and in each had made himself a power both medically and politically. He was born in Chautauqua County, New York, March 25, 1830, and had a good preliminary education. He graduated in medicine from the University of the City of New York in 1852. Very soon after he came to Illinois and practiced in Kendall County until 1861, when he raised a company of volunteers and was elected captain; later he was appointed major and surgeon of the Eighty-Eighth Illinois, serving to the close of the rebellion. After the war he located at Lemont, Cook County, until 1880 when he took up his residence in Hoopeston where he has since resided. Dr. Peirce was sent to the general assembly from Kendall County, sat in the constitutional convention of 1870 and was senator from Kendall, Grundy and Will Counties in 1871. He served as mayor of Hoopeston. Dr. Peirce had a long and eventful career and marked influence in the history of Illinois.

J. B. WALKER, M.D., of Effingham, died Feb. 11, 1911, from apoplexy. The doctor had been ill for a little over a year, but had attended to his professional duties until the day before his death. He was born in Porterville, Pa., in 1856, graduated at Miami Medical College of Cincinnati in 1882, and immediately located in Effingham where he has since practiced. He was a member of the Presbyterian Church and of the various orders of Masonry, and a prominent citizen of his community. His wife, to whom he was married in 1883, and one daughter survive. The funeral, which was held on the 14th inst., was largely attended. The sermon was preached by Rev. S. M. Morton, formerly pastor of the Presbyterian Church. The Effingham County physicians attended in a body, and sixteen members of the profession from outside points were also present to testify their regard for the character of Dr. Walker. Dr. Walker was at one time mayor of Effingham; local surgeon of five railways; president of the board of education; a member of the Effingham County Medical Society; Æsculapian Society of the Wabash Valley and the Illinois State Medical Society, and a constant supporter of the best in the medical profession.



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## ORIGINAL ARTICLES

### END-TO-END ANASTOMOSIS OF THE ABDOMINAL AORTA. USING ABSORBABLE MAGNESIUM RINGS \*

V. D. LESPINASSE, M.D., G. CARL FISHER, M.D., AND J. VIOLET, M.D.  
CHICAGO

The surgery of the blood-vessels is the oldest branch of all surgery. It begins with the first dawn of surgery and has always excited the interest of the entire profession. On serious thought one of the most delicate, timely and awe-inspiring physiologic phenomena is the clotting of the blood. This phenomenon has baffled all attempts at blood-vessel repair up to the present time and even now is the cause of most of the failures in blood-vessel work. The problem of blood-vessel repair in this day of asepsis has simmered down to the prevention of thrombosis. As is well known, fibrin ferment is formed by injuries to the tissues but particularly by injuries to the blood-vessel walls themselves, the lymphoid tissues, namely thymus, bone marrow and thyroid and the pure lymphatic tissues, namely the lymph glands. In any wound fibrin ferment is present in large amount and in reparative blood-vessel operations it must be prevented from acting or removed.

The conditions necessary for the healing of wounds are acute coaptation, careful hemostasis, asepsis, absence of tension and physiologic rest. In blood-vessel wounds the first three of these rules must be much more carefully observed than in wounds of any other structure. Hemostasis must be excellent: all bleeding points must be clamped or ligated. Infection must be absolutely prevented in blood-vessel work. As is well known, if infection is present in a wound, in direct proportion to its amount and virulence, healing is retarded, the sutures cut out and your wound opens up. If this wound happens to be in the femoral artery, for example, you will have a very busy few moments and your patient is fortunate if he survives. Unfortunately, the fourth and last condition for ideal wound healing cannot be fully observed and is a very frequent cause of failures. The

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\* Read before the South Side Branch of the Chicago Medical Society, Nov. 22, 1910.

unavoidable tension of blood-vessel wounds is of two kinds: first, a longitudinal pull; second, a circumferential pressure which is equal to the blood-pressure. The longitudinal pull is operative only in wounds at an angle to the longitudinal axis of the vessel. It is greatest necessarily in wounds that completely sever the vessel and diminishes proportionately



Figure 1



Figure 2

Plate 1.—End-to-end anastomosis of abdominal aorta. Operation April 28, 1910. Dog anesthetized Aug. 8, 1910, 102 days after operation. Aorta exposed and could be seen and felt to pulsate through the line of anastomosis. No gas in the tissue; magnesium absorbed; no constriction and no aneurysm. In the lumen of the vessel was a lateral thrombosis covered with intima except for its extreme tip.

Plate 2.—End-to-end anastomosis of abdominal aorta. Operation May 12, 1910. Dog killed Aug. 20, 1910. Dog was anesthetized and vessel exposed; both iliacs were seen to pulsate; no gas in the tissue; a few small pieces of magnesium still in the tissues. Lumbar gland markedly enlarged. On opening the vessel it shows a fine union, no clot, no stricture, no thrombi and no aneurysm.

as the wound involves less and less of the circumference of the vessel. This pull is due to the natural elasticity of the blood-vessel walls. This

factor is present and remains under all circumstances. It can be much influenced, however, by posture, and in all end-to-end union of blood-vessels the part should be placed and fixed in the position that will relieve this pull as much as possible. The circumferential pressure is operative

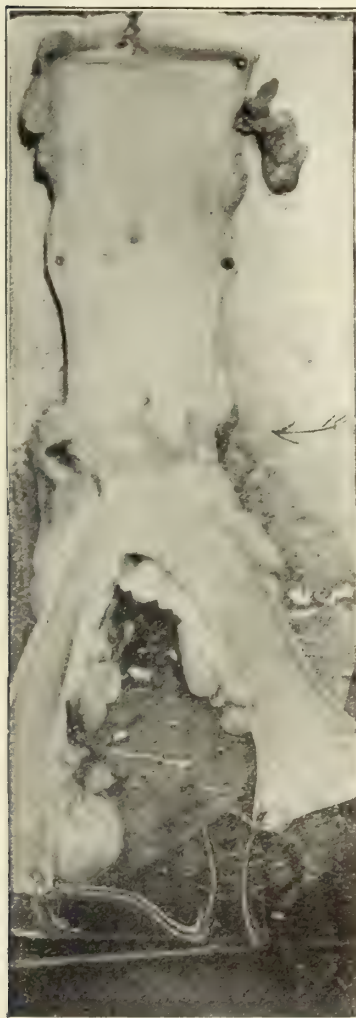


Figure 3



Figure 4

Plate 3.—Operation May 9, 1910. End-to-end anastomosis of the abdominal aorta. Killed Aug. 18, 1910, 102 days after operation. Aorta exposed; both femorals could be seen pulsating; gland is slightly enlarged; magnesium practically absorbed; no clots, no stricture, no aneurysm and no gas in the tissues.

Plate 4.—End-to-end anastomosis of the abdominal aorta. Dog killed three months after operation. No interference with the circulation in the hind legs. Femorals both pulsating; no aneurysm and no constriction; magnesium rings absorbed; no gas in the tissues.

in all wounds both circular and longitudinal and is equal to the blood-pressure in that particular vessel. The only way to influence this force



is to lower the blood-pressure. This can be done possibly by posture, as elevating the extremities, but the use of drugs for this purpose I do not think advisable.

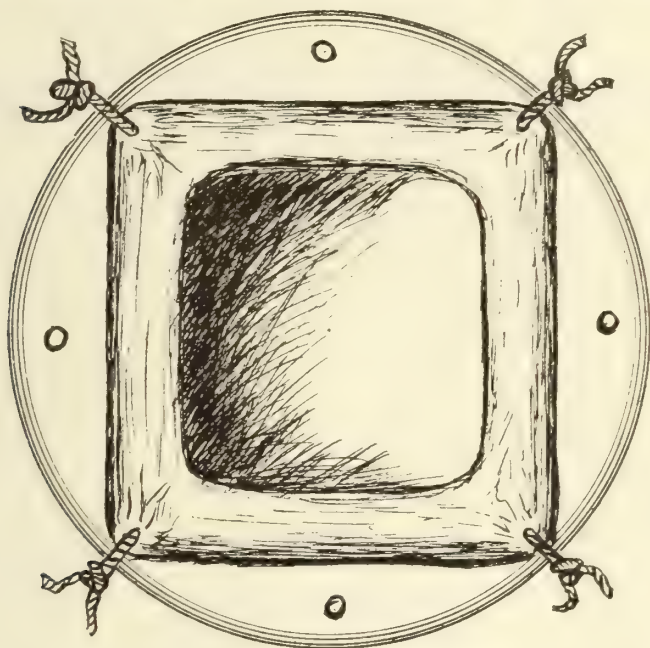
I wish to report on fifteen end-to-end anastomoses of the abdominal aorta done on dogs. Chloroform anesthesia was used. An abdominal



Plate 5.—End-to-end anastomosis of the abdominal vena cava, 89 days after operation. Note the complete absorption of the rings, the absence of gas, no constriction and smooth line of union.

incision through the median line was made, the abdominal cavity entered and the aorta exposed. The peritoneum was torn through, the inferior mesenteric artery caught and ligated as were also the lumbar arteries. In exposing the aorta care was taken not to injure the thoracic duct or

any of its large collaterals coming up to form the receptaculum chyli. In several of our cases these structures were injured; at least a certain amount of milky fluid flooded the wound. This was simply sponged away and the animals recovered just as well as the others. The cords of the sympathetic were exposed in all and whenever they interfered with the operative field were cut. Occasionally some branches of the vena cava crossed the field of operation; if so they were cut and ligated. After freeing the vessel from its bed for approximately 1 to 2 inches, the diameter of the vessel, as the blood was flowing, was accurately determined using a millimeter gauge. In these experiments the diameter of the abdominal aorta varied from 5 to 7 millimeters. Next the clamps were

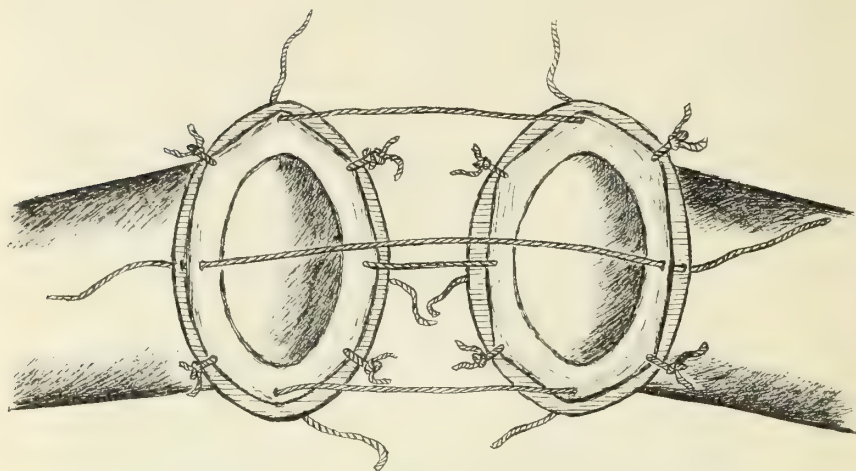


Method 1, Fig. 1.—Shows the fourth stitch passed and tied and the lumen of the vessel is now quadrangular.

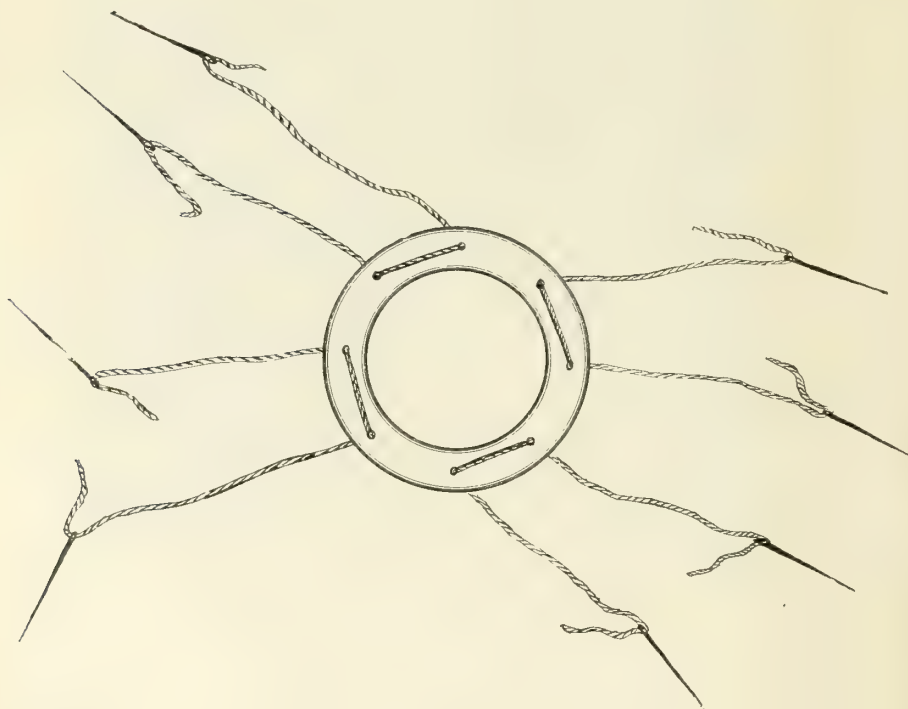
applied, being careful to clamp them tight enough to stop the blood flow but still not tight enough to injure the intima. Section the vessel midway between the two clamps, wash out the blood and the vessel is now ready for repair. Two methods were used in making this anastomosis.

*Method 1* employs two rings, within which the vessel ends are sewed by four sutures and then the two rings are united by four interrupted sutures. After an appropriate sized ring is slipped over the distal end of the vessel a suture is passed, first through the vessel wall from intima through adventitia and then through a hole in the ring. The suture is tied and the tissue forceps removed to permit the vessel to assume its proper relationship within the ring.

A point on the vessel wall is then determined which is directly opposite to this first suture. At this point a second similar suture is passed



Method 1, Fig. 2.—Shows all four of the approximating sutures passed, ready to be drawn up and tied, thus completing the operation.



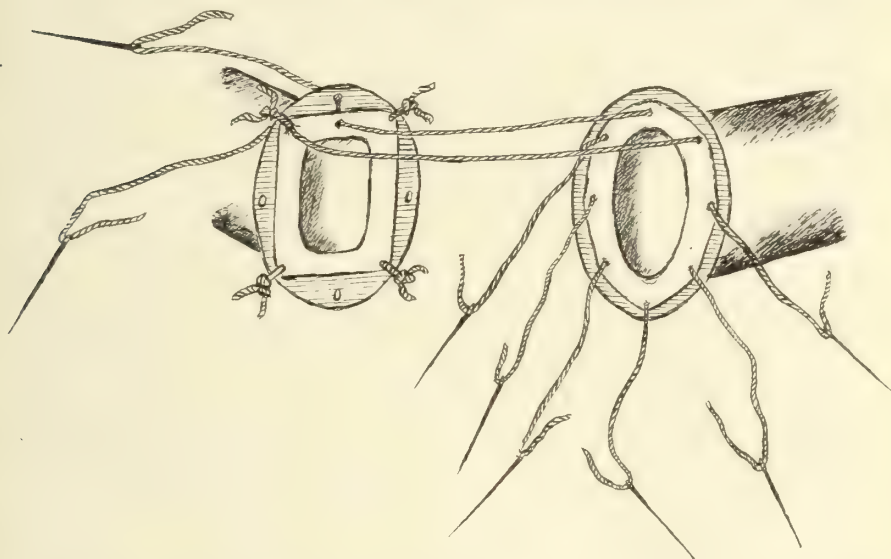
Method 2, Fig. 3.—Shows the ring threaded with the four mattress sutures.



through all the coats of the vessel and then through the appropriate hole in the ring. The suture is drawn up and tied. The location of the third suture is determined by bisecting the vessel wall between the two previously passed sutures and passing a suture through the vessel wall and through the appropriate hole in the ring. Then this suture is drawn up and tied.

The fourth suture is passed on the opposite side of the vessel exactly as the third was passed; after it has been placed and tied, you have the vessel lumen assuming a quadrangular outline (Fig. 1).

These sutures should be of triple O silk and the knots should be placed



Method 2, Fig. 4.—Shows both ends of the vessel. All of the mattress sutures have been passed through the walls of one vessel end. A ring has been sewed into the other vessel end and one of the mattress sutures has been passed through this vessel end and ring. Note the two sutures using the same hole in the ring.

on the edges of the ring so as not to interfere with the coaptation of the rings when they are finally brought together.

Next the four approximating sutures are passed first through one of the unoccupied holes of the ring and then through the everted flap of the vessel end from without in; then across to the opposite vessel end when the needle penetrates the vessel flap from within out, and finally passed through the hole of the second ring. Four of these sutures are passed.

In Figure 2, we see all four of these interrupted sutures passed, each suture including within its grasp both vessel ends and the two rings. When these four sutures are drawn up and tied the operation is completed.

*Method 2.*—In this method two rings are used, one of which is threaded (Fig. 3) and the other is sewed into one of the vessel ends as in Figure 1. First the threaded ring is slipped over one vessel end and suture 1 is passed through the vessel wall from outside in. Next the suture

diametrically opposite to 1 is taken up and passed through the vessel wall at a point exactly opposite to suture 1.

Traction is now made on both of these sutures. This force draws the vessel up into the ring and everts it slightly over the ring. Suture 3 is now picked up and passed exactly in the center between sutures 1 and 2. The assistant now drops suture 2 and grasps No. 3. Traction is made on sutures 1 and 3, and suture 4 is grasped and passed exactly half way between Nos. 1 and 3. Suture No. 1 is now dropped and suture No. 2 is taken up, traction is made on 2 and 3, and suture No. 5 is passed just midway between Nos. 2 and 3. Sutures 6, 7 and 8 are now passed in a similar manner; thus the vessel is everted out over the entire circumference of the ring. Next a ring is sewed into the opposite ends, using the

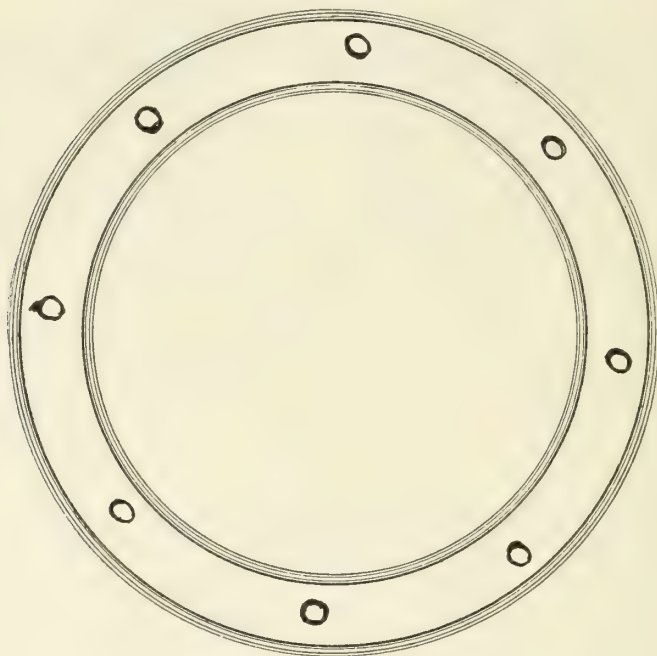


Fig. 5.—The absorbable magnesium ring used in making all these anastomoses.

same technic as in Figure 1. The next step is to pass suture No. 1 through the everted vessel ends from inside out and through the appropriate hole in the second ring; then suture 4 is passed in the same manner and we have the picture shown in Figure 4. Then the remainder of the sutures are passed in their appropriate places, care being taken that they do not become crossed or the vessel twisted. After all of the mattress sutures are passed and the vessel is washed out, the sutures are drawn up and tied, and the operation is completed.

After the approximating sutures are placed and they are ready to tie, wash out the vessel ends thoroughly with saline solution; then ventral flex the dog to relieve the longitudinal pull on the sutures as much as possible while they are being tied, sew the vessel sheath and the perito-

neum over the line of union, then sew up the anterior abdominal wall. The time of interruption of the blood stream varied from twenty-five minutes as the maximum on the first case operated on to sixteen minutes. Our record with several was nineteen minutes. Fifteen end-to-end anastomoses of the abdominal aorta were done with a mortality of eight, or 53 per cent. Of these eight, seven died of shock or infection and one of hemorrhage due to an abscess around the line of union in the artery. Thrombosis in some form occurred in four cases or a percentage of 26.5 per cent. One of these cases was perfectly healed over and the entire thrombus except its very tip was covered with intima. One of the other cases was an early case before I became aware that it was possible to tie the suture too tight and that the edges of the ring could cut the intima. Of the other two cases one was a large thrombus and practically filled the vessel. The other was a smaller one and in view of our experience would probably have been covered with intima if the animal had lived. Hence including all cases the percentage of thrombosis was 26.5 but the real practical percentage I think should be 6.6 per cent., as only one thrombus plugged the vessel so no blood could pass. A definite aneurysm occurred in one case and slight bulgings in two others. These bulgings did not involve the scar but were just above it in one case and below it in the other two. It is probable that they were due to a weakening of the vessel wall caused by a too thorough removal of the adventitia, thus interfering with the nutrition of the vessel wall. Stricture occurred in none of these cases. Clamp pressure caused a slight roughening of the intima in one case. The special points to be considered in end-to-end anastomosis of the abdominal aorta are its deep position overlaid by the small bowel and surrounded by the thoracic duct, vena cava and sympathetic nerves, and the extreme friability of its intima. This is as soft as American cheese and can be picked off with tissue forceps easily.

This research was done in the Laboratory of Experimental Surgery of the Northwestern University Medical School.

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## THE TREATMENT OF SUPPURATIVE INFECTIONS OF THE PLEURA AND LUNGS \*

CHARLES J. WHALEN, M.D., LL.B.  
CHICAGO

This is a very large subject, one which occupies large space in every good text-book of medicine and surgery. While pulmonary surgery dates back to the time of Hippocrates, it was not until after 1600 that even the trocar and canula came into use. The subject fell into abeyance until 1859 when surgical drainage was introduced by Chassaignac. In 1869 Potain applied the siphon tube to evacuate the cavities of empyema through a trocar and canula opening. In 1872 Playfair introduced a siphon drainage by means of a long tube resting in a vessel of water, later

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\* Read before the North Shore Branch of the Chicago Medical Society, Feb. 7, 1911.

arranged to permit of ambulatory treatment. This was one of the first continued drainage appliances. In 1873 Mosler attempted to cure pulmonary abscesses by intra-parenchymatous injections of antiseptics. In 1874 Tachard, and in 1880 Ravilliod, each independently reported the use of permanent siphonage after pleurotomy. In 1881 new impetus was given to the subject by Gluck. Hans, Schmidt, Block and Biondi made similar experiments and these collectively laid the scientific and technical foundation of modern lung surgery. In 1882 Bull reported a series of cases of lung abscess which had been healed by operation. Since then the field has been extended so that now it includes the treatment of abscess, gangrene, echinococcus neoplasms, actinomycosis, drainage of bronchiectatic and tubercular cavities as well as the removal of foreign bodies. In the last few years the subject of septic pulmonary infections has received a great deal of attention and notwithstanding all the favorable reports that have been published on the subject, I find there is still a pronounced hesitation on the part of many practitioners and surgeons to operating on these conditions.

The organisms concerned in these infections are the streptococcus and staphylococcus or both. The bacilli of Fraenkel or Friedlander, pneumococci, are frequently found as well as the influenza and colon bacillus.

In the short time allotted to this paper it will be impossible for me to take up all the various phases of this extensive subject. In order, therefore, that I may bring out the chief points of the more commonly met with phases of the subject, I will confine the paper to the treatment of the lung and pleura as follows: (1) treatment of acute empyema; (2) treatment of abscess of the lung; (3) treatment of gangrene of the lung; and (4) treatment of infection due to penetrating wounds of the pleural cavity or lung.

Empyema or pyothorax is an accumulation of pus in the pleural cavity. It is usually the sequela of recent inflammations of the lung and pleura principally or secondary to suppurative inflammations in distant organs, as for instance an abscess in the pancreas, liver, kidney or vermiform appendix. It may be due to rupture of a subphrenic abscess into the pleural cavity or occasionally it may be due to a rupture into the pleural cavity of an abscess occurring in the course of a Pott's disease of the spine. Again, it may be caused by an extension of an inflammation of the pericardium either septic or otherwise. In this disease it is important to make the diagnosis early. The diagnosis made early and drainage employed, recovery is comparatively short and as a rule complete. The greatest difficulty in making a diagnosis in these cases will be met with in children, primarily on account of the pneumonia which caused the empyema and again on account of the lack of careful diagnostic methods. Early diagnosis and early operative drainage gives as a rule complete result. The trocar must be used more often and earlier in children than in adults. While auscultation and percussion tell whether fluid is present, to make the diagnosis of empyema, aspiration alone can tell whether pus is present. In this connection we might say that the aspirator has its place in making the diagnosis but it has a very limited use in treatment.



We know that some cases of pneumococcal empyema are cured by aspiration. The majority of them, however, are cured not by aspiration but by drainage.

The surgical treatment of empyema consists of evacuation of the pus by incision with or without resection of parts of one or more ribs. Large accumulations of pus in the pleural cavity present a very serious condition and are accompanied by a very high mortality unless treated with the greatest care. In acute septic pleurisy when the cavity has filled rapidly the operation of rib resection should never be done at the outset, as the mortality rate in these cases is very high. It is better to aspirate first which will relieve the urgent symptoms. Following the aspiration the patient should be placed in a sitting position. This permits the remaining fluid to become walled off in the lower part of the chest. Later this can be treated by a free incision or, if thought necessary, by exsection of a rib and free drainage.

I use the words "if thought necessary" advisedly for I feel that many physicians are unnecessarily exsecting ribs in cases of empyema. I have had quite an experience with purulent effusions in the pleural cavity and only in a very small minority of cases have I found it necessary to exsect ribs. I believe we can almost always get speedy and perfect results by making a free opening between the ribs at the proper place and draining. Since I have adopted the plan (in large acute empyemas which involve the greater part of the pleural surface, the lungs being crowded upward, without any apparent walling off by adhesion) of aspirating to relieve the urgent symptoms and placing the patient in a sitting or semisitting position, thus permitting the pus or fluid to gravitate to the lower part of the chest where they become walled off by adhesions, my results have been far better than when radical operation was done at the outset. In this way I have succeeded in several cases in walling off the pus, transforming a diffuse septic pleurisy into a circumscribed empyema, which was operated on successfully by free drainage in most cases and in a few by rib resection a few days later.

A positive diagnosis having been made, the parts should receive a thorough aseptic preparation. In the acute rapidly filling form referred to only local anesthesia is necessary and for this purpose a few drops of a 4 per cent. solution of cocain in a 1 to 4,000 solution of adrenalin chlorid is all that is necessary. Select a point, usually the sixth interspace in the axillary line, inject about 10 drops of the solution, allow about four or five minutes to elapse, then insert the trocar and withdraw the stilet. When the cavity is apparently emptied and the trocar is withdrawn the patient is put to bed with the shoulders elevated to promote the gravitation of the remaining fluid into the lower portion of the chest where it will become walled off in a few days, when the operation of resection if necessary can be more safely performed.

The operation of free drainage or exsection of one or more ribs in circumscribed empyema is not difficult. If the patient is weakened by prolonged sepsis or if a large accumulation of fluid causes difficulty in breathing or a rapid and weak pulse, it is safer to operate under local

anesthesia; on the other hand, if the patient's condition is not serious I prefer a general anesthetic. The location for the incision will be determined by the location of the pus; in all cases the opening should be made at the lowest point of the empyema so as to secure as far as possible perfect drainage. In cases where ribs are to be excised they should be exposed, the periosteum incised and dissected back for a distance of two or three inches. The rib resector is now brought into play and about two inches of the rib removed, always remembering to avoid wounding the intercostal artery. The next step in the operation is the opening of the pleural cavity, again remembering to avoid wounding the intercostal vessel. This is done by making the incision in the center of the space and parallel to the vessels; if this precaution is followed there will be no danger of wounding the intercostal vessel; the incision in the pleura should be large enough to admit easily of an examination of the abscess cavity by at least two fingers. By the use of the fingers the outlines of the cavity should be determined if possible. In attempting to determine the limits of an abscess cavity occasionally more than one pus cavity will be found to exist. On one occasion when trying to determine the limits of a pus cavity I succeeded in breaking down the adhesions into a second cavity thus connecting the two cavities into one. In this way it may be possible to avoid making a second opening through the chest wall. By percussion after having emptied one abscess you may be able to locate a second and it may be found necessary to make a second opening into the chest wall. In certain large persistent empyemas it may be necessary to excise two, or perhaps in some cases, three ribs in order that plenty of room may be had for thorough examination and cleaning out of the abscess cavity.

Perfect drainage can be established by passing two or three large sized drainage tubes about three inches long into the cavity; the outer end of the tubes being transfixed with large, sterile safety pins to prevent them being lost in the abscess cavity. These can be held in position by placing gauze packing about them.

Irrigation in these cases is worse than useless; in fact it does harm, for it is often followed by high fever and other symptoms of toxic absorption. When patients are not doing well after operation the trouble is usually due to inefficient drainage and if this feature is remedied, subsidence of the bad symptoms almost invariably takes place.

For facilitating expansion of the lungs following operations for empyema many devices have been invented to prevent the entrance of air into the pleural cavity. Usually the ordinary tight dressing we use is air-tight as soon as the inner layers are wet. A little air or pus is forced out on expiration and the dressing acting as a valve holds it out, then the lung expands a little to fill up the space. This sort of dressing is sufficient as a rule in early cases. In old cases which do not expand in this way, artificial methods to promote expansion have to be resorted to. Animal experiments have demonstrated that the compressed lung by fits of coughing and other expiratory efforts with a more or less closed glottis fills itself with air from the sound lung. If, therefore, intra-

pleural pressure can be removed, the lung rapidly expands. A study of the healing cavities in empyema shows that they close much more rapidly from side to side by lung expansion than from above downward, and because of this fact lies the danger of pocketing and retention by unequal expansion. In delayed sinus healing unequal lung expansion may so shut off the tract as to interfere with proper drainage. In a lung long compressed by purulent exudate the adhesions may be so dense and the exudate so thick that in some cases the lung never expands under simple drainage. Such a lung needs, in addition to pressure from within, the establishment of a decided negative pressure.

The length of time the lung may be compressed and still again expand is indefinite. A case is on record in which after a period of three years of pus in the chest with an imperfectly drained large cavity communicating with the bronchus the lung was made to reexpand and fill the side of the thorax. The amount of negative pressure required to overcome spastic contraction of the lung itself is slight. Ten millimeters of mercury will keep a normal lung expanded and two or three times this amount is usually sufficient for expanding a lung in cases of empyema. A lung that is adherent may stand a higher degree of vacuum but the constant effect of even so small an amount as that above mentioned seems efficient in time. The following is a very simple and effective procedure that will bring about this result:

After the establishment of simple drainage or the exsection of the rib and after the escape of the major part of the purulent material, substitute a single tube of about 40 French caliber for the two or three rubber drainage tubes inserted at the time of the primary operation. About the tube pack borated gauze saturated with an antiseptic ointment; take a piece of dentist's rubber dam about 5 or 6 inches square, cut a small hole in the center, stretch it over the tubing and run it down to the side of the chest; bind this in position by strips of adhesive plaster; over this place absorbent cotton, then a chest binder put on with the tube coming through. Into the rubber tube insert a glass connecting piece and on the other end a smaller piece of tubing about 6 or 8 inches long which connects with a Politzer bag. The use of a collapsible rubber bag is all that is necessary in most cases to make the treatment a distinctly simple and ambulatory one; the patient can be up and out of doors as soon as he is able to leave the bed. At the same time he is receiving the benefit of continuous aspiration drainage. The Politzer bag can be carried under the clothing and emptied and replaced by the patient as required.

Of the many devices made to secure an air-tight joint at the chest the above has been found the simplest and the most inexpensive, and will frequently last for weeks without leaking. The dressing should be changed once a week, at which time the depth of the vertical cavity or sinus should be noticed, as well as the amount of lung expansion. Frequently at this time the lung will be found to be in contact with the tube, when it will be necessary to shorten the tube. By repetition of this once a week the tube is gradually removed as the cavity is obliterated. The



routine employment of this method in cases of empyema will make operations like Estlander's, Schede's and others done with the same purpose, I am sure, exceedingly rare.

The method devised by Perthes is more cumbersome and will not permit of ambulatory treatment. It is on the plan of an ordinary exhaust or water pump. The principle involved is that a tube inserted in a downward direction into another tube through which water is flowing is under the influence of constant suction. The tube in the chest (before mentioned) is connected with the water pump just described, which may be 30 or 40 feet away from the patient. The stream of water required will be found to be surprisingly small (one-eighteenth to one one-hundredth of an atmosphere). The first tube is passed through an air-tight bottle which collects the pus. By this method striking results are often obtained; lungs which by the old method expanded slowly will expand more rapidly, and many cases have yielded by this treatment in which it was necessary previously to perform extensive destructive operations on the chest wall in order to bring it into contact with a shrunken lung.

Failing in this method of treatment in old empyemas we should resort to Estlander's operation which consists of resecting ribs and allowing the soft parts to fall in contact with the shrunken lung. Schede has shown us that it is the old thickened pleura which causes the delay in healing and that makes it necessary to repeat the operation several times before final recovery. In doing a Fowler's operation Ramschoff noted that an incision carried through a thickened pleura to the lung widens out rapidly, as will any subsequent number of incisions that may be made. He recommends making incisions like a gridiron about a quarter of an inch apart and crossing them by others. Following this the lung begins to expand at once. Magie advises going one step further by removing the parietal pleura and making multiple incisions in the thickened pleura of the lung.

In the treatment of abscess of the lung it should be noted that internal therapeutics is valueless in preventing progress of the disease, loss of strength and perforation of the pleural cavity by pus, or the prevention of metastatic processes and a final termination in chronic abscesses. No doubt some cases originating in pneumonia recover after evacuation without surgical intervention but it is seldom that drainage through a bronchial tube is sufficient or sufficiently prompt to avoid extensive destruction of lung tissue. In the absence of the gangrenous element the abscess may not enlarge rapidly nor cause marked septic symptoms. Its walls not having become indurated coalesce after discharge of pus, and cicatrization, may be prompt and complete; on the other hand we cannot be at all sure that this favorable result will follow as these abscesses are often near the pleural surface and may easily give rise to empyema, which in such cases runs a severe and protracted course.

We have as a result of delayed evacuation of the fluid a rapid breaking down of lung tissue, a thickened unyielding fibrosed abscess wall that is slow to contract and which resists extensive operative procedures. I



wish to impress on you the fact that suppuration of the lung is always a dangerous condition and is an indication for the early removal of the pus, which may rupture into a bronchus, into the pleural cavity, or give rise to multiple abscesses of the lung or cause general septic manifestations.

Spontaneous cures should be looked on as fortunate accidents and not waited for at the risk of the patient's life or future condition of health. The fact that a number recover spontaneously is not sufficient reason for the reservation of operative interference as a last resort. It has been found that early diagnosis and speedy operation give the best results; but when the abscess has already broken into a bronchus and is discharging freely it would seem proper to wait a time for Nature to finish the cure. Should the discharge of pus by mouth not diminish rapidly, and the septic symptoms continue, we should not delay long. Evidence of a gangrenous nature on the part of the abscess calls for early operation; the danger here is greater of infecting other parts of the lung and causing general sepsis. Other reasons justifying some delay in operating are the persistence of acute pneumonic process and the desirability of having formed adhesions between the two pleural surfaces. These should not be allowed to weigh against early evacuation of the pus when there are well-marked indications for the same.

The prognosis in pneumonotomy depends on the variety of the abscess, its location, duration, whether adhesions have taken place between the two pleural surfaces, as well as on the age and general condition of the patient. Abscesses due to pneumonia, suppuration of echinococcus cysts, and those following wounds are the most favorable. Abscesses of origin other than pneumonia are less favorable. The prognosis is very unfavorable in metastatic abscesses and those occurring in connection with bronchiectasis. In tuberculosis about 50 per cent. recover from operation but later succumb to the disease; it is therefore of temporary benefit only. Embolic abscesses are frequently multiple, the primary foci being found elsewhere than in the lung. I had a case with four foci exclusive of the one in the lung; the lung abscess was successfully opened and drained. In influenza the abscess is apt to be multiple, due to breaking down of disseminated areas of consolidation. Of gangrenous cases those give best results which arise from bronchitis putrida or pneumonia.

In abscesses due to foreign bodies the prognosis is bad; we seldom find the foreign body, the abscesses become chronic and the patient dies of prolonged suppuration or pyemia. Most of the other bad results from operation for acute pneumonic abscess may be charged to non-recognition of the abscess and consequent delay in operating until the patient's condition has become too poor from sepsis to expect anything but a fatal outcome; or they may be due to multiple abscesses secondary to the original, or to some other complicating process. These bad results seem therefore nearly all avoidable provided that the case comes under the physician's observation from the beginning. After making a diagnosis the time to await before the operation depends on the size and location of the abscess

and on condition of the patient. If the abscess is small and is deeply situated in the upper part of the lung and the patient is in good condition, then waiting two, three or four weeks might be justifiable. If the abscess is in the lower or middle part of the lung where drainage would be more favorable operations should be promptly undertaken. In spite of the fact that the operative technic of pneumonotomy is comparatively simple the operation is often unsatisfactory and disappointments are not uncommon.

In the first place the abscess though present may not be found. This may be due to the fact that its location has not been made out accurately beforehand. It is one thing to diagnose the existence of an abscess of a lung and quite another to locate it exactly; mistakes are made as to height, depth, etc.

Case 1 illustrates very nicely the difficulties encountered at times.

Case 1.—Dated July 9, 1904; J. C., male, married, aged 44 years; occupation plumber; diagnosis, abscess of lung. Has been ill ten weeks; is weak and extremely emaciated; pulse 120; cough slight, harsh and brassy; constant pain in base of left lung. Another physician some four weeks before had made an exploratory puncture in the mid-axillary line in the fifth interspace and inserted the needle in different directions but was unable to locate fluid of any kind; a second puncture was made two weeks later with negative results; two weeks later a careful examination convinced me the man had a pulmonary abscess and I decided to make a preliminary puncture through the fourth interspace. The second insertion of the needle opened into an abscess cavity; two and one-half inches of the fourth rib were excised through the adherent layers of the pleura and an abscess of the upper lobe was broken into which discharged nearly a pint of pus: the temperature fell at once to normal, the walls of the abscess collapsed rapidly, and the wound was practically healed four weeks later. Then a chill, high fever, sweating and general prostration indicating that he must have an empyema below the sight of previous incision, I excised the rib previously operated on as well as the one below and evacuated a pint of foul smelling fluid. In addition at the location of the previous operation an encysted abscess was encountered and evacuated. Nearly complete collapse accompanied the operation but by the use of stimulants, etc., twenty-four hours later the patient was out of danger. Recovery was rapid with no perceptible deformity, the lung filling the thorax as evidenced by normal respiratory sounds in the region operated upon.

Bozy found a gangrenous focus in the upper lobe of the right lung when physical signs pointed to a localization of a cavity in the lower lobe. Better results from operation will follow more prompt recognition on the part of physicians of the existence of an abscess and more accurate diagnosis of the location of the same and from earlier operative intervention. The mortality at present is higher than it should be. It is probably not far from 50 per cent.

In making a diagnosis past experience will help us in the majority of cases. In failing to note the existence of adhesions of the pleural surfaces in exploring we overlook a valuable diagnostic method. The absence of adhesions carries with it considerable doubt as to whether the abscess will be found directly beneath the exposed pleural surfaces, inasmuch as adhesions are the rule and are present in over 80 per cent. of the cases. Again, experience has shown that the great majority of abscesses following pneumonia occur in the pleural surfaces of the lower lobe. Again, the

location of adhesions between the pleural surfaces is usually an important guide to the situation of the pus cavity. After exposing the adherent pleura the aspirating syringe should ordinarily locate the pus, if inserted a number of times in different directions and to various depths. A valuable diagnostic aid in abscess of the lung is the *x*-ray. Great precaution is necessary in its application, for at times the picture is misleading, as is sometimes the case in fractures, etc. In all cases both anterior and posterior and lateral photographs should be taken. The *x*-ray picture when studied in connection with all the symptoms and signs will enable us in nearly all cases to locate accurately the abscess cavity.

The treatment of abscess of the lung consists of free incision with resection of ribs, usually two or more, and drainage. The abscess having been located, a couple of ribs are resected in the same manner as for draining an empyema of the pleural cavity. After the lung pleura is exposed, if the abscess is superficial you will usually find the lung pleura adherent to the costal pleura. When this condition is present, incision can be made directly into the abscess cavity. In deep-seated abscesses there may be no pleural adhesions to guide the direction of the incision. In the absence of adhesions a small aspirating syringe can be brought into use, a needle passed in the direction of the suspected abscess, and if pus is found the abscess is easily located. If adhesions of the two pleural surfaces have taken place the incision can be made directly into the abscess cavity without fear, as the abscess under such conditions is usually located very near the surface. If the strength of existing adhesions is in doubt, suture should be used for reinforcement so that the introduction of scalpel or trocar will not cause the adhesions to give way, followed by pneumothorax and separation of the lung from the field of operation. If there is any doubt about the nearness of the pus to the pleura, the aspirating needle will be introduced in the direction of the suspected abscess. In the absence of adhesions of the visceral to the costal pleura, after the abscess has been located it will be well to stitch the visceral to the costal pleura. If suturing is done satisfactorily incision in the pleura can be done at once without putting it off to a second sitting. If the condition of the patient is good the delay of a couple of days will ensure stronger adhesions without lessening the patient's chances. Pack the wound with borated gauze two or three days later when adhesions have formed between the two layers of the pleura. Incision can then be made direct into the abscess without danger of infecting the general cavity of the pleura.

This method, however, is not universally adopted. Quinke operates in two stages: first, he secures pleural adhesions by cauterization with a paste of zinc chlorid, which he applies to the floor of the wound. After adhesions have formed he completes the operation. For this purpose the thermocautery is used; invasion is made slowly and deep into the tissue of the lung until the seat of the trouble is reached. This latter method has never appealed to me. I have always considered the chlorid of zinc paste as unsurgical and it strikes me it will not appeal to the aseptic surgeon.



Serious hemorrhage from the superficial part of the lung is uncommon but the larger vessels of the deeper parts are liable to bleed profusely. Should a complete pneumothorax and resulting collapse symptoms occur in spite of the precautionary measures already spoken of the patient may be saved by prompt measures. The lung may be seized with tenaculum forceps and drawn forcibly against the wound in the pleura and retained there by sutures. Further, the lung may be expanded by means of O'Dwyer's intubation tube. Should the pus be opened into the healthy pleura there is very great danger of a fatal empyema especially in a person already septic and weakened. An attempt should be made, however, to provide for drainage at the most dependent part of the thoracic cavity.

The incision into a lung abscess should be large enough to permit a thorough inspection of all solid masses. For the purpose of draining lung abscesses most operators prefer large rubber drainage tubes together with gauze. Gauze alone does not drain pus; it merely drains the liquid portions of the pus, leaving the solid portions behind. The rubber tubes are fastened in the same manner with safety pins as in empyema, to prevent their passing into the abscess cavity and becoming lost. The tubes should be kept in place until the cavity has become obliterated by healthy granulations. Abscesses communicating with the bronchial tubes should under no circumstances be irrigated until the granulating process has closed off the communication with the bronchus, as the fluids would pass directly into the bronchus and trachea causing strangulation. Here as in empyema irrigation should not as a rule be employed, as the danger of spreading the infection into adjacent tissues is a real one and fatal results have undoubtedly been caused in this way.

Acute gangrene of the lung is treated by rib resection and thorough removal of all gangrenous material with drainage, avoiding irrigation, which involves the same danger as in empyema. The same kind of drainage tubes with gauze packing are used in the treatment of cavities produced by gangrene of the lungs as are used in the treatment of abscesses of the lungs. These tubes should remain in position until the abscess cavity is entirely obliterated by healthy granulations. If the tubes are removed too soon the external wound heals very rapidly and may cause retention of pus in the granulating cavity producing fever and making it necessary to reopen the wound and insert drainage again.

Penetrating wounds of the chest wall or injuries to the lungs caused by fractured ribs often terminate in conditions that require surgical treatment. The symptoms denoting surgical treatment are symptoms of pressure or infection. The question arises in this condition as to the advisability of opening the pleural cavity by resection of a rib or by the more simple operation of aspiration. The operative opening of the chest cavity for the purpose of removing accumulations of blood has not proved very satisfactory. The mortality has been large owing to the fact that these accumulations are not walled off and that they become readily infected through the operative wounds. In some cases I have depended on simple aspiration with better results, removing all the liquid portions

of the blood, thereby relieving the urgent symptoms caused by pressure and depending on the final absorption of the clot. In case the clots become infected rib resection and drainage will be necessary.

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## DIVERTICULA OF THE INTESTINE \*

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In view of the fact that the abdomen is opened so frequently under the mistaken diagnosis of appendicitis, it is well that we should bring into prominence any intraabdominal affections which may simulate that disease, and have them prominently in our minds while making a diagnosis.

Every surgeon has made a diagnosis of appendicitis, and confidently opened the abdomen, only to find the appendix intact, and has had the mortification to look to some other viscus to account for the symptoms presented. The rôle which Meckel's diverticulum plays in intraabdominal symptomatology is fairly well known, but there are other diverticula which play an important part in the diseases of the intestines and with the diagnosis of which we are not sufficiently familiar. In fact, in some of these cases it is impossible to make an exact diagnosis until the abdomen has been opened, so closely do the symptoms of these inflamed diverticula resemble attacks of appendicitis, as I will show by an illustrative case.

There is no doubt in my mind that many of the cases of perityphlitis which were brought forward prominently in the literature some time ago, more especially by British writers, were in reality cases of inflamed or infected diverticula, and it is only recently that surgeons have given this subject the careful consideration it deserves.

Intestinal diverticula consist of larger or smaller hernial protrusions of the bowel wall, usually consisting of all the coats of the intestine, when it is known as a true diverticulum. When some of the coats of the bowel wall, usually the muscular, are absent, it is called a false diverticulum. At first these pouchings of the bowel wall communicate with the lumen of the intestine, but through inflammation the intestinal opening may become closed, and they are converted into cysts, or where they contain bowel contents or retained secretions which have become solidified, they resemble solid tumors. On the other hand, the intestinal opening may remain patulous, the diverticulum being filled with intestinal concretions when the circulation becoming shut off, gangrene supervenes, and all the symptoms of gangrenous appendicitis present themselves.

According to Hartwell and Cecil,<sup>1</sup> "if no inflammation supervenes the structure remains unchanged, the growth varying in size from a buckshot to a hen's egg, and they do not give rise to any clinical symptoms, thus resembling Meckel's diverticulum and the appendix vermiformis." On

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\* Read at a meeting of the Chicago Medical Society, March 8, 1911.  
1. *Am. Jour. Med. Sc.*, cxi, No. 2, p. 175.

the other hand, Brewer<sup>2</sup> reports a case in which an acutely inflamed diverticulum of the sigmoid was operated on the same as an acutely inflamed appendix.

In addition to these inflamed diverticula giving rise to symptoms resembling appendicitis they, when involving other portions of the intestine, cause a slowly spreading peritonitis, which it is impossible to differentiate and as Moynihan, Mayo, Griffin and others have shown, become the seat of carcinomata. Conversely, new growths in the large intestine have been diagnosticated as carcinoma when, if a closer examination had been made, they would have been found to be merely inflamed diverticula.

I well remember a case which I operated on a few years ago in which I made a diagnosis of carcinoma of the head of the cecum. It was so large and so adherent that I considered it inoperable, so I contented myself with doing a lateral anastomosis between the ileum and ascending colon, and sent the patient, who was pregnant, home to die. Instead of dying, she was delivered of a healthy child at term, and the growth entirely disappeared. I have come to the conclusion that this was nothing more or less than an inflamed perforated diverticulum, as there were no other pathologic conditions present to account for the mass.

*Etiology.*—Beer<sup>3</sup> and others have attempted to account for the presence of diverticula of the intestines by a condition of chronic constipation, and they were justified in this assumption by the fact that up to that time diverticula had only been found in patients of 30 years of age and over. Other investigators have since shown the presence of diverticula in the intestines of children. Consequently this hypothesis falls to the ground.

Strain on the mesentery in cases of overloaded bowel or in enteroptosis may explain the presence of diverticula in the small intestine, as they are found usually near the mesenteric attachment on the side where the blood-vessels enter the wall of the bowel.

Chlumsky has proved experimentally that diverticula of the intestines cannot be produced by internal pressure alone, and it would thus seem to be apparent that there must be some defect at present unknown in the structure of the bowel wall which lies at the bottom of this obscure pathologic condition.

Skirving<sup>4</sup> reports a case of inverted diverticula of the intestine where, instead of the hernial protrusion being on the exterior of the bowel, a probe could be passed through several openings in the bowel wall into pouches which were in the intestinal lumen. This would also seem to controvert the theory of internal pressure as a causative factor. We will still have to leave the etiology of this condition as an open subject.

*Pathology.*—In all the cases reported which have been examined post mortem and in which no symptoms have occurred during life, the diverticula consisted of protrusions of either all the coats of the bowel wall, or the mucous and serous coats, the muscular being absent. In those cases where infection had occurred without perforation, the walls were thickened, and a round-celled infiltration into the connective tissue of the intes-

2. Jour. A. M. A., Aug. 15, 1908.

3. Am. Jour. Med. Sc., 1904.

4. Brit. Med. Jour., 1907, p. 256.



tine had taken place. A greater or lesser degree of peritonitis was found, according to the severity of infection. Some of these inflamed diverticula contained intestinal contents and were in a high state of inflammation, while others had gone on to the suppurating stage. Others, again, which had become closed off from the lumen of the intestine, resembled cysts or solid tumors.

Those cases in which a marked degree of infiltration had occurred involved the wall of the adjacent intestine, encroaching so much on the caliber of the bowel that obstruction had resulted. Finally, long-continued pressure on the walls of the diverticula had resulted in perforation, producing a peridiverticulitis, with abscess formation and peritonitis. Colic diverticula in their inflamed state are prone to form adhesions with the bladder and, perforating that viscus, form vesico-colic fistulæ.

*Symptomatology.*—A great many of the obscure pains in the region of the large intestine, especially in cases of chronic constipation, are undoubtedly due to diverticula undergoing a moderate degree of inflammation. When this inflammation progresses to a degree sufficient to encroach on the intestinal caliber, all the symptoms of obstruction of the bowel supervene. When there is a high degree of inflammation, with or without abscess formation, we have all the symptoms of an acute appendicitis, with localized pain, rise of pulse and temperature, and an increased leukocyte count. If perforation occurs, a spreading peritonitis makes itself manifest, which is only limited by the protecting adhesions while, if perforation into the bladder occurs, we have gas and feces escaping with the urine.

Finally, perforating diverticulitis simulates in all its symptoms carcinoma of the intestine, such as loss of weight, blood in the stools, the presence of a palpably localized mass, pain, and bowel obstruction.

*Treatment.*—In all cases of obscure pain in the abdomen, when any or all of the foregoing symptoms are present, the abdomen should be opened and the probability of an acute diverticulitis existing should be borne prominently in mind. If one or more diverticula should be found in an inflamed state, they should be removed and the opening in the bowel closed with a double row of sutures. Where an abscess has formed, it should be dealt with in precisely the same way as an appendiceal abscess. Finally, where there is an obstruction of the bowel or a perforated diverticulum, the exigencies of the case alone will determine whether an intestinal resection should be performed, or the adhesions broken up, with subsequent amputation of the diverticulum.

The after-treatment of these cases is the same as that of appendicitis or resection of the bowel, with which all are so familiar.

In this connection I wish to report the following case:

Case 1. Mr. L. B., a strong, healthy, robust man. Married and of the best personal habits. Was referred to me at St. Luke's Hospital with a history as follows: He had always been in the best of health until twenty-four hours previously, when, en route to Chicago on a train, he was suddenly seized with severe abdominal pain. He immediately went home, to bed, and sent for his physician, who made a diagnosis of appendicitis, but decided to wait. As the pain continued and vomiting set in, he was removed to St. Luke's Hospital.

Examination revealed a very tender area over the appendix. Temperature, 99.8°, and pulse 72. Leukocyte count, 13,900. As the pain was so pronounced, I opened the abdomen that afternoon, and immediately found what appeared to be a gangrenous appendix, which was removed, and a small drain inserted. For the next two weeks the patient did well, with the exception of some degree of tympany and a prodigious thirst. The urine contained neither sugar nor albumin. We had difficulty in moving his bowels, so much so that an enema had to be administered daily. A peculiar feature of the enema was that the orderly, who has been employed at the hospital for years, told me he had never seen such large, copious bowel movements follow enemas for so long a time after operation when the patient was on a liquid diet. He progressed favorably, having free bowel movements and passing large quantities of flatus until the fifteenth day, at 4 p. m., when he began having copious emesis of a brown watery character, which kept up constantly, and soon became fecal in character. Singultus also developed. His pulse rate suddenly jumped to 132. I reopened the wound at 11:30 p. m., and found the ileum enormously distended. I made an enterotomy, releasing three or four quarts of liquid feces, and much gas. I injected into the bowel  $\frac{3}{4}$  i of saturated solution of magnesium sulphate, and closed the opening by Czerny-Lembert sutures. I then explored the bowel and found that what I supposed was the appendix had been removed from the small intestine. Just below the stump was a narrowing and thickening of the bowel wall, but as I could milk intestinal contents through it, I paid more attention to two fibrous bands which were binding two loops of the ileum together in a kinked position. I left in a drain and put the patient to bed.

The following morning he had a slight bowel movement of the same character as the fluid which I found in the small intestine the night before, showing I had milked some of it past the obstruction. He passed a good deal of flatus and was very comfortable all day. He slept at intervals during the night, but next morning, the seventeenth day, the singultus and vomiting recurred, and he had all the appearances of bowel obstruction, and was desperately ill.

As a last resort, I made an enterostomy and in doing so found this same induration and narrowing of the ileum. I also discovered the cecum lying away up behind and above the stump which was left on the small bowel. There were no more adhesions present, and the bowel drained freely, but, unfortunately, the patient succumbed to exhaustion thirty-six hours subsequently.

The specimen which I removed at the first operation resembled exactly a moderate-sized appendix with a very small short mesentery. It was filled with fecal concretions and absolutely gangrenous. I am now convinced it was a diverticulum of the ileum simulating appendicitis. A bowel resection, had it been made at the time of the first operation, would undoubtedly have saved the patient's life.

Unfortunately, no post mortem was secured.

#### DISCUSSION

Carl Wagner: I do not know whether I can add anything new or not to the subject so well treated in this paper, but I am very glad Dr. Cuthbertson brought it before the society because so very little is known of this very important subject—important to every one, not only the abdominal surgeon. I am sure all who have operated on the intestines often have had a number of unexplained bad results, some of them no doubt due to overlooking diverticula or not bearing such occurrences in mind. I have had two cases of this kind in my early practice which called my attention to this question; however, I shall not go into them at this time, but will perhaps make them the subject of a paper at some future time. I would like to confine my remarks to a few points of the anatomy and pathology of diverticula and diverticulitis.

The conception of the term "diverticula" seems to begin and end, in the minds of many, with Meckel's diverticulum, as far as the abdomen is concerned; but we have in the abdomen just as in the esophagus pulsion pressure and traction diverticula and I know of one case, "Hochenegg," in which a Meckel diverticulum caused a traction diverticulum as you may see from the illustration which I give you here. (Illustrated the point at the board by diagram.) Fig. 1.

Another possibility in development of diverticula which should not be overlooked may occur near the stomach at the entrance of the bile-pancreatic duct into the duodenum. (Diagrammatical illustration.) Figs. 2 and 3.

Furthermore, diverticula may develop at any point on which an opening from the bowel into the peritoneum exists, as for instance along the blood-vessels of the epiploic appendices, or upon the basis of some previous pathologic condition of the bowels. False diverticula may develop from old ulcers of the bowels. Hundreds of diverticula have been observed in the same person, especially located on the sigmoid.



Fig. 1.—Meckel's diverticulum causing a traction diverticulum on the same part of bowel.

This leads me to the subject of meso-sigmoiditis. I believe many so-diagnosed cases were originally diverticulitis which finally invaded the mesentery of the sigmoid. They have a tendency, if they do not degenerate into abscesses, to form strong and dangerous stenosis. Those which develop into abscesses break through into the bladder to the extent of 20 per cent. and thus establish intestino-vesical fistula.

I feel quite positive that many cases in which colostomy had been performed on account of a supposed diagnosis of carcinoma of the lower colon or sigmoid and had continued to live for a long time after the operation or had improved in general health very much, must enjoy the benefit of the doubt that they probably represented diverticula and diverticulitis complicated with large infiltration of the bowel and surrounding tissues producing a state of stenosis of the bowels, resembling very much a tumor like carcinoma, but were entirely void of any malignant character.

In this connection, I recall one case in particular which I observed in the University clinic at Halle during the time of Volkmann. A patient was brought in for operation and well looked over once more by the internist (the operation



was to have been for extirpation of carcinoma of the sigmoid) when the professor of internal medicine, Weber, put the question whether or not the bowel had been thoroughly and frequently emptied. He was assured that it had but in spite of this he requested more high rectal enemas as he contended that if the large mass represented a carcinomatous growth, a radical operation would be out of question at this stage of the disease and a few more days of waiting would certainly not aggravate the condition very much. In the course of two days a whole bucket-full of hard scybala was washed and massaged out of this man's intestines and a wonderful cure of this large cancer effected in this simple way.



Fig. 2.—Multiple diverticuli of the sigmoid

Wm. Cuthbertson (closing the discussion): I am much obliged to these gentlemen who bear me out in the important place which this condition assumes in relation to abdominal obstruction. Dr. Wagner has illustrated conditions which may occur as it affects the sigmoid. Beer has drawn particular attention to the fact that they infect not only the sigmoid, but ascending and transverse colon.

Dr. Wagner has called attention to the relation of these conditions and sigmoiditis. That is true, because these multiple pouches become filled and cause sigmoiditis. Cecil and Hartwell call attention to the fact that these being filled, produce this condition, and go on to the suppurative stage producing conditions which simulate appendicitis on the left side.

In regard to these pouches being high up, near the pylorus, it would seem to me that the pouches have been produced there not by intrainstestinal pressure, as that is the region where we have so many lesions that traction could be produced on that portion of the bowel and in that way produce these pouches which form the diverticula.

In regard to the strangulated diverticula and referring again to the case I reported to-night: if a diverticulum has perforated and is discharging into some other viscera it is simply a matter of opening the abdomen and reversing the stump.

You may wonder why I did not locate the position of this diverticulitis which I have mentioned. When one opens an abdomen and finds a gangrenous appendix he should not dig around for other conditions. I took it for granted



Fig. 3.—The interior aspect of a piece of bowel studded with multiple diverticuli.

that the diverticulum simulated the appendix. I simply lifted up the bowel, exposed as little of it as possible and inverted the stump.

When I open the abdomen in the future if I am not absolutely sure what the condition is I shall pay much more attention to the condition of the bowel surrounding it and if I have the slightest suspicion shall do a bowel resection.

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"606" \*

CARL WAGNER, M.D.

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CHICAGO

When your presiding officer called on me with a request to speak on the question of Ehrlich's "606" at this important meeting, I was fully

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\* Read before the meeting of the North Central Branch of the American Urological Association, at Chicago, Jan. 5, 1911, and at the meeting of the Chicago Medical Society, Feb. 1, 1911.

aware that I would appear before a body of men who were well acquainted with the facts of this question as contained in the current literature, and therefore will not dwell on citing many miraculous cures from it nor take your precious time otherwise than for the purpose of briefly stating to what conclusions my study and observations at the different clinics in Frankfort, Heidelberg, Magdeburg, Kiel, Berlin, and the Rockefeller Institute have led me.

My first visits to Frankfort at the end of August and during September reminded me very much of the exciting days of 1890, when Koch's tuberculin set the whole medical profession frantic and filled the hearts of so many millions of suffering phthisics and their friends with bright hopes, which only faded so quickly, and often so sadly. It so happened that from our own clinic in Halle the very first tubercular patients were sent to Berlin to receive the great blessing of the new medical era. Many of them came home silent forever. The wave of excitement in the medical profession ran just as high then as in September, 1910, at Frankfort.

Naturally, with this recollection in mind, I went to Frankfort very skeptical. I visited Herxheimer's clinic; I was present at the demonstrations at the gynecological clinic; had interviews with neurologists at the Speyerhaus, etc.. What I had read on the subject in medical journals looked very big to me, but what I saw in reality in Frankfort and had a chance to see again and keep on watching impressed themselves as wonders and miracles on my mind. One of the greatest treats which we enjoyed was afforded to us in the 6th of September meeting in which reports of 5,750 cases were on hand, with 300 cases from the skin clinic at Frankfort alone. Ehrlich appeared personally that night and read the reports of the most interesting cases and commented on them. The crowds of visiting medical men which in those times poured into the laboratory office of Ehrlich, speaking all varieties of languages, armed with all kinds of letters of introduction from various offices, schools and hospitals, and further personal calls from high dignitaries, and so on, wore terribly on the professor. The thousands of dispatches and money orders which were returned unopened, letters of the most various kinds demanding information, turned the whole Therapeutic Institute into a veritable storeroom. Ehrlich finally took refuge in Baden Baden for a rest. In the meanwhile the high wave of excitement calmed down some, so that my last few visits found him more rested and more approachable.

He spoke then at length and very emphatically of the great advantages and the good results of the Schreiber method and recommended in particular the careful study of the publications of Gennerich, as well as a visit to the Marine Hospital at Kiel, which I promptly made, to my greatest satisfaction.

I must confess the simplicity of the preparation of the intravenous injection fluid, as witnessed at the City Hospital at Wiesbaden, with Weintraub, and Schreiber at Magdeburg, as well as the tolerance of the patients to the intravenous introduction of "606," especially the method



of Schreiber, impressed me so favorably that it seems to me to deserve the preference over the intramuscular or subcutaneous one, as far as the technical points are concerned. There was never a hitch in any case, either in preparation or in application of the chemical, and the expressions of the patients regarding pain were very much more satisfactory and encouraging than those which we received from those treated by the intramuscular or the subcutaneous method, which latter were often very pitiful.

The method which I prefer and practice is the one brought out by Schreiber, and is as follows: the substance is put in a glass receptacle and dissolved with warm distilled water, in the proportion of 10 c.c. to 0.1 of "606." Often there will be segregation of a few particles, which



look exactly like gum arabic. This is dissolved very readily by adding more water. Then we add 0.7 of normal soda solution to 0.1 of the substance, which renders the solution turbid. This turbidity disappears very readily on shaking. We then bring the quantity of the solution up to 250 with sterilized physiologic salt solution.

*Syringe.*—For the injection of the solution we use a syringe as devised by Cassel, in Frankfort. This we fill with half an ounce of physiologic salt solution and then enter with the needle into one of the cubital veins, which is made more visible and tangible by a slight constriction of the arm above with a rubber tube. We then aspirate a small amount of blood into the syringe containing the solution, in order to convince ourselves that we have entered into the lumen of the vein. Then we turn

the stopcock of the needle, fill the syringe again, this time with the "606" solution, and advance this amount with slow pressure into the vein. We repeat this until the 250 c.c. are injected, then pour another half ounce of physiologic salt solution in the glass receptacle and inject this also in the same way into the vein. This latter is practiced in order to avoid any of the medicated injected fluid diffusing into the tissue near the puncture of the needle, while extracting the same, which would mean irritation and pain and possibly infiltration; or, in other words, the column of fluid in the lower part of the vein down to the opening, which is made by the needle puncture, is salt solution and not "606."

The whole procedure should consume not less than six minutes. The patient is best placed on a couch or bed, the operator sitting at the right side of the patient, who is in a reclining position. The glass receptacle is placed between the patient's arm and body on the right side. A nurse attends to the filling of the receptacle and also the turning of the stopcock of the syringe, while the doctor's hands rest perfectly quiet on the patient's arm, which must be absolutely quiet and steady. After withdrawing the needle from the vein, a small pad of sterile gauze is placed over the opening made by the needle in the skin, and fastened with some adhesive plaster.

Everything pertaining to this operation must be done with absolutely the same careful observance of asepsis as in any other surgical operation. During the whole procedure there is hardly any complaint on the part of the patient. In older people who have arteriosclerosis or plethora, congestion of the head may be slightly complained of. The patient is then put to bed and, in my opinion, is best kept there for a day. There will be a rise of temperature in the first twelve hours to as high as 101 F., gradually ascending, and also gradually descending in the next twelve hours.

In regard to temperature, I would like to say that with a second injection, six or eight weeks afterward, there is almost no rise of temperature. After from one to four hours there may be a feeling of cold through the body, but not a real chill. Sometimes patients complain of nausea and some headache. Very seldom does it come to a complication like vomiting or diarrhea. At the end of the second day most of the patients feel absolutely well. The vomiting and diarrhea have been proved to be the result of an irritation of the stomach and intestines by arsenic and not by the soda solution. If by chance a lesion of the vein should occur and some fluid enter into the adjacent tissues, there would be no great danger to the tissues, as in a very short time afterward it would be absorbed and disappear, but no necrosis follows.

*Complications.*—There has never been one case of death from intravenous injection, properly used; nor were any untoward complications observed, except a very few slight thromboses of the veins, which resulted in recovery in eight or ten days. The experiences with the intramuscular and subcutaneous methods differ from these enormously. There are about 8,000 out of 10,000 cases injected after the Wechselsmann method which have large and sometimes very bulky infiltrations, causing a great

deal of pain and inconvenience, beside mental anxiety. Some of them dragged on for weeks and even months, and some of them had to be operated on. I remember one case in particular, which concerned a medical student who had been injected after the Wechsellmann method in Königsberg. He came to Magdeburg in a most deplorable condition, suffering intense pains, a month and a half after injection, and exhibited a very large mass in the scapular region, which had to be opened and drained.

A widespread idea exists that these large tumefactions contain only sterile fluid; in reality quite a large number of them have proved to be real abscesses. Necrosis of the most disastrous dimensions are on record, of which the one of Buschke is certainly worthy of mention. An injection, which had been applied by him under the mamma, had caused such enormous destruction that even the bone was eroded and a perforation into the pleura was feared.

Experiences of this and other kinds with "606" had made Buschke so timid in the use of the new remedy that he went to the other extreme, giving out a statement that "606" would not be used in his clinic except in cases in which everything else had failed.

But there are other points of importance to consider with regard to the intramuscular and subcutaneous methods. The so-called "depot": what will, for instance, happen if one of those depots should break through into a vein? This possibility is not so far-fetched. The sudden entrance of "606" solutions of such high concentration into the blood circulation would most certainly have the same disastrous effect as the case of Frankle, who injected "606" in 20 c.c. intravenously, which resulted promptly in death. He then advised against all intravenous injections. His procedure as well as his deductions are, of course, most absurd, and especially so when we have now 1,200 cases of proper intravenous injections authentically reported on hand, in which not the slightest mishap is to be deplored.

*Depot.*—One other point deserves our special inquiry. How much of the depot is absorbed and how fast? What will you do in case recidives occur in the presence of such a large depot? Is it not a very uncertain matter, and would it not be possible that through some active changes in the tissues a large amount of the depot might be thrown suddenly into the blood circulation and cause unlooked-for complications, in the form of arsenic intoxication? Furthermore, chemical changes of as yet unknown qualities may take place through oxidation and reduction of the chemical which may prove to be very poisonous. The depot region is objectionable as a *locus minoris resistentiæ* which may react very unfavorably to trauma at any time.

Another rather disagreeable character of intramuscular or subcutaneous injections constitutes the probability, according to observation in some cases, that after an interval of eight or ten days (and I remember one of fourteen days, in which the man was free from pain) the patients are suddenly surprised by a new and intensely violent attack of pain, which may last even days, requiring application of ice-bags and morphin.



*Solubility.*—In this connection it may be well to inquire into the degree of the solubility and length of time during which the chemical circulates in the body. Recent experiments by Loeb show that even as late as three months after the injection some arsenic may be found in the circulation. The subject of solubility of the drug must be naturally of the highest importance, because it decides in what condition the preparation should be introduced into the system. Very little is heard in general discussions on this point; in fact, some men who used this remedy have never even taken the trouble to enlighten themselves on this question. They have only the vaguest conception of this most fundamental factor concerning this new remedy.

Arsenic is very little soluble in the free state and very freely soluble in alkaline and acid solutions. The lowest degree of solubility is present in slight acid or alkaline reaction, but it is just the blood which represents this slight alkaline reaction. This condition of the blood robs the arsenic of its poisonous character, because it is therefore very little soluble in the blood. The solubility is estimated to be about 0.001 per cent.



The effect of "606" is about as follows:

1. Mucous patches, larynxedema, macular syphilis, intolerable syphilitic pains in bone disappear within twenty-four hours.
2. Erosive chancres, pustular syphilids, facial paresis, abducens paresis and early icterus yield in forty-eight to seventy-two hours. Most surprising is the perfect process of epidermization.
3. Condylomata disappear in eight days, with full restoration of the skin. Papular syphilis terminates within two or three weeks. Wassermann has been observed to turn negative as early as forty hours, and on the average of about three to four weeks. Patients invariably increase in weight and brighten in humor. It may be well to state here that in some obstinate local affections the application of the dry powder of "606" has proved very efficient in some cases.

Tabes, especially pseudo-tabes and pseudo-paralysis, seem to come in of late for a better share of treatment with "606," as at first anticipated, on account of the former fear that atrophy of the optic nerve might be aggravated. It has been demonstrated that the thirty-seven notorious scare-crows of amaurosis in the literature were due to atoxyl, which is

entirely different in its relation to the nervous system in general, and in particular to the optic nerve. Atoxyl is neurotropic, circulates in the blood and possesses strong affinity for the nerve substance in the body, producing in some cases progressive atrophy of the optic nerve with fading of the papilla. Ehrlich has maintained that arseno-benzol, on the contrary, is very little, probably not at all, neurotropic, and is borne out in his assertion in over 20,000 cases so far injected, which have shown no ill-effects on the optic nerve. We have the report of a number of cases on hand in which patients not only with beginning atrophy of the optic nerve but almost blind ones have been subjected to "606" without any untoward results. This has widened the field for the use of "606," not only in regard to ophthalmology, but also as to cases of paralysis, tabes and pseudotabes, and in regard to the latter, more justifiably so, when we remember that, according to Erb, many of these cases are still victims of active syphilis, such as blood-vessel changes, gummata, skin affections, which positive Wassermann proves to coexist with their well-established sclerotic processes. Even trophic ulcers of the soles of the feet disappeared readily through "606" in similar cases.

Of course, arseno-benzol does not claim to change any of the sclerotic degenerative processes, but is only injected with the idea of controlling the still existing active syphilitic conditions. Cases of tabes with heart muscle degeneration or stenosis must positively be excluded from this treatment, as the lowering of the arterial blood-pressure, one of the well-known effects of "606," might prove dangerous and even fatal.

*Exanthemata.*—In hyperesthetic patients exanthemata occur to the extent of 1 per cent., which develop about the seventh to the twelfth day, with a rise of temperature to 104 F. Large areas of inflammation develop around the point of injection. Eruptions, like scarlatina, appear on the trunk and extremities very symmetrically, accompanied with conjunctivitis, vomiting, diarrhea, coated tongue, thirst, general malaise, but no involvement of the kidneys. These exanthematous conditions and the fever are only of a few days' duration, during which the pulse always remains good. An analogy is offered by Schlick in the serum treatment, according to whom not the serum produces the toxemia, but the effect of the antigen on the organism creates the toxins.

*Acousticus.*—With reference to the selective toxic effect of "606" on the cranial nerves, especially the auditory as pointed out by Fingar and Rille, the following may be said:

The analysis of the reported cases of auditory disturbances and the comparison with cases treated by other remedies than "606," lent an entirely different aspect to this question because:

1. Never before had so much attention been paid, careful observation applied and detailed reports brought in as since the existence of "606"; consequently more of such cases have now appeared in the literature.

2. Absolutely the same auditory affections occur in the same period in the course of syphilis, whether treated with "606," mercury or iodids.

3. These auditory manifestations, without exceptions, all take place during the secondary stage of the disease.

4. Most of the syphilitic changes in the nervous system appear in the first year after the infection and decrease from year to year; 48 per cent. take place in the first three years, 4 per cent. iritis and iridocyclitis, 6 per cent. neuritis optica develop in the first year after infection.

5. These complications must be considered to be neurorecidives and we must accept that the syphilitic deposits in these nerves escaped the effect of the first treatment; (1) on account of their unfavorable anatomic disposition, and (2) because the blood circulation was so overfilled with spirochetes that the drug could not cope with all of them at first. By unfavorable anatomic disposition is to be understood: the nerves possess only a very poor vascularization, which may easily be disturbed through as powerful an irritation as syphilis. This holds particularly true in regard to such nerves which are tightly encased in dura envelopes and pass through narrow bony canals as in the case of the auditory and facialis on entering the meatus auditorius internus. Furthermore, the ear represents a *locus minoris resistentiæ* on account of the frequent syphilitic affections of the throat, which very readily produce occlusion of the Eustachian tube and constitutional hyperemia of the ear.

6. The dissemination of the spirochetes seems to be unproportionately numerous from initial lesions of the head, especially from chancres of the lip and tongue. In reality five out of ten of the cases in question had as initial lesions chancres of the head and three others were extragenital, one on the hand.

7. But the last and strongest argument consists in the fact that auditory lesions in cases treated with mercury or potassium iodid were cleared up with "606" itself.

*The Blood.*—The effect on the blood consists in quite an increase of leukocytes, which rise sometimes up to 38,000. It acts very favorably on the lecithin metabolism. According to Heubner, no met-hemoglobin is formed.

*Eyes.*—Michaelis injected four cases of choked disc, of which three yielded perfectly. Gummatus iritis, keratitis parenchymatosa and even some affections of the corpus vitreum have been beneficially influenced.

*Spirochetes.*—What becomes of the spirochetes under the influence of "606"? In six patients, infants, who died a few days later of other intercurrent diseases, the post mortem showed no spirochetes in any of the organs or the blood, with the exception of the lung of one case, in which a few degenerate, agglutinated specimens were detected, which were in the last stages of dissolution.

If we scrape from papules of the vulva, which is rich in spirochetes, soon after the injection, some secretion, and subject this to examination.



we find that the motility of the spirochetes has almost entirely disappeared; they lose their finer outlines, and swell up.

*Contra-indications to the Injections.*—These are all cases which have weak heart-muscles, especially in tabes, stenoses, cases of hemophilia: the latter on account of the tendency to hemorrhage through the toxic effect of arsenic on the small arteries and capillaries. For the same reason cases recently operated on should be excluded. Profuse hemorrhages have been noticed in these. Further must be excluded putrid bronchial catarrh, large aneurysm and far-advanced cases of degeneration of the general nervous system.

*Advantages over Mercury.*—The advantages over mercury are as follows:

1. People who would for some reason or other not submit otherwise to inunction or any protracted treatment with mercury are more apt to try a single injection of "606," and may in primary affections be cured permanently, and sooner be safe for their environment.

2. In doubtful cases, when a primary lesion has not yet developed, but reason exists that the patient has been exposed to syphilitic infection, "606" may be considered. Especially does this pertain to cases of the so-called *syphilis d'emblé*, which so often occurs among physicians and surgeons, through a prick with a needle or a cut with a scalpel during operations. One single dose may act as a preventive.

3. In primary cases, especially if excision of the initial sclerosis could be combined with a full dose of "606," it might be of abortive effect if done early, because the spirochetes are not blood parasites, but pass only once through the blood current, and quickly nestle in the tissues. It is for this reason that we so seldom are able to find the spirochetes in the blood circulation. When I say excision of the primary lesion, I am well aware of the fact that when the lesion is developed dissemination of the spirochetes through the whole system has taken place, but perhaps not heavily nestled and settled or encapsulated in the tissues. It is probable, then, that the number of spirochetes which enter into the blood circulation will be less if the main focus is wiped out, and that the constitutional treatment with "606" will be more effective. Of course, the excision must be carried far through the healthy tissue and the wound well cauterized, with the application of "606" powder, because we know that spirochetes may exist, even in tissues which show neither macroscopically nor microscopically any changes, as has been demonstrated on the infected cornea. We know, further, that the seat of the primary lesion as well as any focus of spirochetes are the places of predilection for the development of tertiary syphilis.

4. Most cases which do not respond to mercury any more and real malignant syphilis have certainly found in "606" their true friend, because "606" *fast spirochetes* really do not exist, according to the more careful observers, especially such as Gennerich, of Kiel. He has shown in a number of malignant cases that, in spite of the great obstinacy of the disease, the repetition of the use of "606," supported by the mercury treatment, if intelligently followed up, will finally lead to successful

results. I remember one case in particular in which the destruction of the soft tissues as well as the bones in a young soldier was most terrific and rapid. The first few injections were very discouraging in regard to their lasting effects. He kept on introducing arseno-benzol in short intervals, and arrived at the seventh injection. This cleared up the condition very satisfactorily and the process was put under full control.

5. With "606" we cure without any risk the fetus *in utero* and the new-born through the lactation of the injected mother, which must be considered as one of the most wonderful properties of "606." It is to be noted that neither the milk secretion of the mother diminishes during the fever period, nor does the child show any discomforting effects.

6. On diseased tissue "606" has a special elective effect, as we see from the good results in psoriasis, lichen simplex, verrucae, and so on.

7. We must mention in particular the strong tendency to epidermization even in the most obstinate and inveterate cases.

The effect on toxic cachexia from syphilis is very rapid and favorable, inasmuch as in a comparatively short time a great increase in weight and better general well feeling can be demonstrated. Even if these cases of cachexia do not give a Wassermann-negative, which proves that there are still some syphilitic active foci, they do not fall back into the same old state of cachexia again, as before.

In cases where an idiosyncrasy for mercury exists or which are mercury-fast, it is the one resource, and in cases in which life is directly in danger, as in gummata of the larynx, syphilitic angina, and so forth, it may act as a life-saver.

Does it deserve the high title *therapia sterilisans magna*, and what position does mercury hold now in the treatment of syphilis? So far the cases fully cured with one injection cover only a period of one year and five months. Many primary cases had to be reinjected, on account of recidives. Every experienced specialist on the question has cases on hand which, while not with one dose, but with one inunction treatment of mercury covering a month or two, remain free from all syphilitic demonstrations. Heubner quotes two cases which after the inunction treatment with mercury twenty-four years and eighteen years ago, respectively, enjoyed perfect health, never showed any syphilitic demonstrations; their wives and children are well and sound to-day, and are Wassermann-negative.

Gennerich at Kiel has come to the conclusion from his most careful study of the question that every initial sclerosis of long duration, or secondary and tertiary condition, is more amenable to the good effects of "606" if it is treated beforehand for a short period with mercury. Schreiber, who has perhaps 1,000 cases of intravenous injections on hand, has established as a routine treatment the rule that all cases undergoing his intravenous injection of "606" are subjected to the injection of mercury, beginning eight days after the introduction of the "606" into the system, to be continued for eight weeks after. If at this time the patients are still Wassermann-positive, another intravenous injection is resorted to.

followed up again with mercury treatment in the same way as before stated. He makes the point that the mercury used must be arsenic-free.

If we further consider the disposition of the spirochetes to settle in the lymphatic spaces and tissues, where they surround themselves with a wall of connective tissue, then any means which can cause the spirochetes to break through this wall and effect a flow of lymph through this depot again must be considered a great aid in wiping out such syphilitic deposits, as then the "606" can reach them. Such exists in fibrolysin, which therefore might be combined with the general treatment.

The results of Schreiber and Gennerich are so satisfactory that I believe the combination of the old standby, mercury, with the new remedy "606," in the hands of the specialist or those who have made careful study of the question, will be the treatment of the future, until further observations teach us differently.

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## THE MIXED PHASE OF MANIC DEPRESSIVE INSANITY, WITH STUDIES IN FOUR CASES \*

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The presentation of this paper is not to place forth an original idea, but rather a revival of a certain group of symptoms which, when occurring together, form a certain class or type of mental disorder.

Kraepelin and Weygandt describe a certain interesting group as the mixed type of manic depressive insanity. It is of this type that I wish to speak.

Kraepelin and Dreyfus have, I think, concluded that the involutional depression might and is classed as a mixed form of manic depressive insanity.

Kraepelin has lent a great service to psychiatry in demonstrating the necessity of grouping certain symptoms and a closer study so as to be able to describe certain disease entities. By some this has reached an extraordinary position, by showing certain minor features of the symptom-complex of involutional melancholia and finding that certain depressed cases recovered, while still others were progressive, ultimately arriving at a very large grouping, namely: non-deteriorating, or functional psychosis, and deteriorating. This, on the face, shows a loss in the research of mental diseases rather than progression.

During my work among the insane, I have been struck by the dissimilar picture of manic states and still greater by the dissimilarity of the depressed phases along with a variability of individual symptoms throughout the attack, which as a whole do not harmonize with the manic states or depressed phases. It is not uncommon in circular insanity to see a transition from one phase to the other and that the change of the

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symptoms are not always accomplished in the same length of time. A lessened motor activity may be the first symptom to abate in transition from the manic states. Later the patient may be content to lie in bed but still retain the pleasant and exalted mood with a flighty talk which gradually subsides as the symptoms of depression intervene. In the transition from depressed states to manic, we may have increased motor activity with later the other symptoms gradually appearing. The occurrence of the symptoms as referred to above are not always the same but by a purely schematic view-point a great many varieties of changes are possible. The mixed condition shows that the components of manic and depressed states show a very close association and possibly led Kraepelin to class the depressed and manic states into one group, namely, manic depressive insanity, subdivided into three phases, the manic, depressed and mixed.

The study of manic depressive insanity is purely a disarrangement of the associative sphere of consciousness. The study of association will necessarily embrace the neuron theory and is based on Lugaro's observation, namely, that a nervous impulse passing from one neuron through another to a third, causes certain gemmules or branches of the second to protrude and assures contact between one and two. In turn gemmules or branches of the third protrude and hence the second and third are in contact. In this way reaction passes from first to third.

The sites of contact between neurons are called synapses and McDougall has claimed that they play an important part in the rôle of psychical processes. It is probable that the contact is incomplete, the intraneural tissue offering a certain amount of resistance. This resistance is shown in the short delay of time found in eliciting a reflex.

The physiology of reflex action does not concern us so much here; suffice to say that the rate of transmission along a nerve fiber is constant regardless of the intensity of stimulation. But in reflex activity an intensity of stimulation shows an increased reflex action. This shows that there is some resistance to stimulation and it is to be inferred that it occurs at the synapses. To explain how this bears a relation to mental process we will consider, for example, a sudden sound or flash of light will produce a sudden closure of the eyelids reflexly; but if this sound or light is insufficient in stimulation independently to provoke a reflex, it will, if occurring at the same time, or with short intervals of time, provoke this reflex. This action is due to a stimulation of two or more receptive centers (if the stimuli are too weak to provoke an action independently they are called subliminal stimuli or facilitation). The facilitation is shown by centering our attention on a movement, the greater will be the reaction to certain stimuli.

Now, to discuss further: the neuron is charged with a substance called neurin, which is similar to a Leyden jar charged with electricity. Each stimulus received by a neuron increases the amount of neurin which, when charged to a certain degree, overflows at the synapses and so on through certain other neurons and according to the law of conservation of energy, is converted into work. This neurin which we have spoken of

usually passes by means of the law of least resistance and the point of overflow is usually at the place where it previously occurred. This gives us a peep at the physical basis of habit.

By sensory stimuli we are enabled to retain consciousness. This may be criticized by some, claiming that certain inorganic substances are subject to external stimuli, but this subject embraces a discussion of metaphysics and, possibly, will never be settled. By retaining consciousness we must again call on the neuron theory for support. By an intricate connection of neurons we receive on our cerebral cortex certain percepts, reflexly.

For example: by the end organ, rods and cones, to the internal granular layer of the retina, next to the ganglionic layer, in turn to the external geniculate body to the occipital lobe and from this to the frontal, parietal, occipital, temporal and island of Reil, our cortex receives the percept yellow and round. Through the tactile corpuscles we feel roundness and roughness. Through the muscles' spindle we perceive weight. Through the hair cells we hear a certain sound or thud on dropping an object. By means of the Schneiderian membrane, through its pathways of neurons, our cortex is conscious of a certain aroma. Through the bipolar cells we are enabled to perceive resilience. The above percepts, yellow, round, rough, weight and resilience, sound on falling and the aroma, are collected through the physical presence of neurin overflowing at the synapses the same place as before, each sensation received at the cortex at the proper time, to collect the percepts to form the idea of an orange.

As a summary of association we divide it into projection areas, namely, the Rolandic area, anterior part of parietal lobe, occipital lobe in part, first temporo-sphenoidal convolution and limbic lobe. These contain motor neurons but greater and overlapping sensory neurons, each variety of which is termed psychomotor sphere and psychosensory sphere of consciousness, respectively. The true associative areas are supposedly located in the frontal lobe. The posterior part of the parietal, the occipital and temporal and island of Reil. These areas are termed the intra-psychic sphere of consciousness.

By this our consciousness embraces the associative areas and projection areas or is divided into psychosensory, psychomotor and intra-psychic spheres of consciousness, or to make it more plain, one is conscious of stimuli, these stimuli are weighed and a decision is reached by the function of the associative areas, resulting in muscular action. This condition is purely reflex and occurs at the synapses due to overflow of neurin.

Manic depressive insanity is a disordered function of the intra-psychic and psychomotor sphere of consciousness. In manic states one receives all sensory stimuli, and by a hyperactivity of the associative areas and an attempt to obtain a resultant, shows itself in an increased motor activity or psychomotor activity. By a hyperactivity of these associative centers one stimulates old percepts or association and by touching or tapping a certain idea with a percept one gets an increased activity of association and the result is flight of ideas or flighty talk. By tapping percept I mean that when one sees the color red, immediately the idea of

red house or idea of certain uniforms, etc., presents itself in speech through tapping an old percept in the associative areas. These tapping percepts are not brought into association with the immediate surroundings but previous percepts prevail in the intra-psychic sphere and consequently we get a clouding of consciousness with some loss of orientation either as to place, person or time, depending on the degree of functional disorder.

In depressed phases one shows a paralysis of the associative sphere or a lack of decision, spoken of as difficulty in thinking out. This is termed a retardation of thought, which means difficulty of association. Retardation of thought is not found alone in depressed phases but may be due to destruction of neurons in organic states. The sensory percept is also at fault or the threshold value lost.

In the mixed state of manic depressive insanity we may find a number of conditions which is a disarrangement of the intra-psychic and psychomotor sphere of consciousness with some hyperactivity of certain neurons and an abeyance of function in others.

The following cases will illustrate:

Case 1.—Miss C. W., admitted March 23, 1910.

Mother died at the age of 36, while confined in a hospital for the insane. The father is a farmer, has considerable means, is quiet and retiring. Was born in Germany and uses beer moderately.

The patient is 20 years of age; single; has always been in good health. The present illness came on gradually; worrying and accuses herself of wrong doing. This gradually increased until she came to the hospital.

She was under weight but complexion was florid. At the time of her admission she was very resistive, every movement was resisted. After being placed in bed she became very restless, moved her arms about in an irregular manner, ran about the ward purposelessly, falling about. Restraint was necessary to prevent injury. All the time she refused to talk. Her facial expression was of depression with anxiety, with a depressed mood. Later, she gave as a reason for not wanting to remain in bed, that she had no money to pay for it. Her restlessness subsided to some degree, but resistiveness became more marked. Her appetite became poor and it was necessary to feed her by force; in consequence her emaciation became extreme. She would stand in one position for hours with eyes open, resisting every movement. Later she would resist going for a walk. It was necessary to use force to get her in the dining room and again resistance was encountered when an attempt was made to take her from the room. Six months later she became so emaciated that it was necessary that she be placed in bed to reserve her strength. A month later the resistiveness was not so marked. She then spoke of hallucinations of hearing, saying that her step-mother was dead. She talked some. There was no flight in her stream but a marked retardation of movements. She continued to improve until in November she began to take more interest in her surroundings, talked freely with some hypo-manic symptoms. A marked clouding of consciousness was elicited, gave as a reason for being resistive that she was unable to pay for bed and food.

November 18, nine months after her admission she was parolled to her father. At present she has, from all outward appearances, recovered.

At first glance this case suggested the dementia præcox group, possibly due to the mutism and resistiveness. This group, however, is only superficial and upon closer study we are compelled to classify her as belonging to the manic depressive group of the mixed type. Her depressed mood, her anxiety, her motor restlessness and clouding of consciousness confirm the diagnosis. We have in this one patient some manic symptoms and some of the depressed phase.



Case 2. Mrs. M. C., admitted to the Hospital April 18, 1910; weight 99 lbs.

Ears somewhat deformed, palate high and narrow. Nutrition poor. Mucous membranes pale. Thyroid easily palpated. Skin is dry and cool; hair dry; tongue heavily coated; breath offensive; bowels constipated; sordes on teeth; pulse 96; temperature normal. At no time was any cutaneous anesthesia demonstrated.

Her appetite was very poor; fed by persuasion and force. Would not drink water of her own accord; neither would she respond to the call of nature, passing her urine and feces in bed.

Three months previous to her admission she manifested an anorexia, which gradually increased until there was a marked loss in weight, later a depression developed with some agitation, walking the floor, wringing her hands, it being impossible for her to keep quiet. This condition increased; she was then brought to the hospital. At the time of her admission she was very resistive, especially marked on passive movements of the larger joints. It was necessary to restrain her in bed as she was up and about. Later, she became more quiet, would lie in bed quietly for a time but usually was picking at the bed clothing and, later, picked the skin off her face. The facial expression was neither depressed nor elated but at times suggested wonder. For a long time she would hold her head from the pillow as though she was listening. All of this time she was being fed by tube. She did not speak but when her home and immediate relatives were spoken of, she became somewhat emotional, her head would be turned toward the examiner with a marked increase in respirations, which suggested an adequate re-action in the emotional field. She continued to be somewhat restless, although never noisy. At times she peeped from under the pillow and bed clothing, suggesting a playful or elated mood; this, however, was only slight. In August she had improved to such an extent that she was allowed to have her clothing. She was taking nourishment of her own accord although, at times, by persuasion; was talking some in a whisper and showed a marked motor retardation. She would smile a great deal, standing in one position for a long time.

Her condition improved until December, when she showed insight into her condition, a clouding of consciousness and from all outward appearances seems to be recovered.

Some time (seven years) previous to her admission she had an attack of endometritis following child birth; during lactation she was very weak and anemic. This was given as a cause of her condition. From this and her physical condition one suspects very strongly confusional insanity or infective exhaustion psychosis. But, upon closer analysis of individual symptoms one is justified in classing this case as the mixed type of manic depressive insanity.

Case 3. Mrs. A. Y., admitted to the Hospital April 1, 1910, as a voluntary patient, during her third attack. She is 39 years of age.

As a child she developed normally, received her education in Germany, and at the age of 18 became governess in a private family and was there for a number of years. She was married eleven years ago and has two children. After the birth of the first child she began to worry and became depressed; was confined at a private sanitarium for one month and recovered. Eighteen months previous to her admission here she had an attack similar to the first, from which she recovered. The third attack began two months ago.

At the time of her admission she was very talkative, apprehensive and anxious; the face suggested depression; there was no motor restlessness; she talked about the top of her head being indented which caused sleeplessness. This continued until she was transferred to a disturbed ward. Her rest has been very much disturbed, sleeping two to three hours each night. The stream shows a flighty talk with a marked distractibility.

By the history of previous attacks and flight of ideas, along with a depressed mood, without a change in the motor sphere, we make a diagnosis of manic depressive insanity of the mixed phase. This case shows a clouding of consciousness with some loss of orientation as to time. Upon the surface involuntional melancholia is suggested, but we see that the manic symptom, namely: flight of ideas, is present, while the depressed mood has been persistent, with no change in the motor sphere.

This lady gradually improved, and, upon request, was discharged Jan. 2, 1911.

Case 4. Miss H. E. S., admitted Aug. 1, 1910.

She was 28 years of age, and by occupation is a foreign missionary; has received a collegiate education. She had a remarkable record for work, and, as a result, suffered an attack of what is described as an acute mania, Dec. 23, 1909. Her appetite was variable, for the most part she was fed by persuasion, and, as a result of this, her emaciation became extreme. After returning to this country she was treated in her home for a period of seven months; her appetite became better, and she apparently regained her normal physical health. She did not recognize her home or family.

At the time of her admission she was quiet, showed a marked motor retardation, with an elated mood, a retardation of thought and a flight of ideas. The flight at times might have been overlooked; this, however, has been more marked at one time than another. The elated mood showed itself in the happy expression of her face, and, occasionally, she showed a playful attitude. Upon seeing her laugh "to herself" without apparent reason, one would think of a deteriorated case.

This patient has shown a marked clouding of consciousness, with a loss of orientation as to time, place and person, and, at times, has mistaken the nurses and physicians for someone whom she had previously met. Occasionally, she has had some fleeting hallucinations of sight and hearing; no delusions were elicited.

One might mistake this case for a dementia præcox but, upon a closer analysis of individual symptoms, one does not hesitate to class her as a mixed phase of manic depressive insanity.

The above conditions show: in Case 1, an involvement of the psychomotor sphere and intra-psychic sphere of consciousness. In Case 2, an involvement of the intra-psychic sphere wholly. In Case 3, some involvement of the intra-psychic sphere with, possibly, a somatic involvement. In Case 4, an involvement of the intra-psychic and psychomotor sphere, with a hyperactivity of some neurons and an abeyance of function in others.

These cases based on statistical symptoms might be wrongly classified, but a proper grouping of symptoms and a study of the individual cases leads to an altogether different classification.

It must be remembered that manifold transitions of the mixed group may be expected. The foregoing cases are conditions which might be transitory in the typical phase of manic depressive insanity, the symptom-complex lasting for months and weeks, showing itself throughout as a mixed type.

Many of these cases have, I believe, been regarded as dementia præcox, but later a typical manic or depressed attack shows itself, followed by recovery.

Often the incongruity of mood and thought are such as to suggest dementia præcox, associated with fantastic ideas and odd and peculiar

actions. It, however, is necessary to ascertain the history of the case, and have a consistent setting in which they occur.

The type of personality, the mode of onset, the exciting causes, etc., are important, as certain emotional reactions have entirely different origin.

From statistical data we learn that certain patients have certain symptoms with or without recovery, and by a purely schematic formula a few unimportant symptoms are raised to diagnostic importance.

The above is a good example of a statistical method. We learn from this how certain patients show certain symptoms, and how many recover.

The manic-depressive reaction, when observed in its simplest form, does not appear so much as a special disease or pathologic process, as an exaggeration of a condition belonging to our normal experiences (Meyer).

This prototype in normal life is found in the emotional variability and fluctuations in efficiency and capacity, which seem to be an intimate part of our makeup, although faintly developed.

When these emotional waves and fluctuations become sufficiently marked to attract attention, we recognize the patient as slightly abnormal; from the unstable individuals a transition to the milder types of manic depressive insanity seems plausible.

Simple mania and depression we can account for in certain biologic reactions deeply rooted within our makeup. We, as yet, do not know how to account for the peculiar dissociation and peculiar combinations that appear in the mixed form of manic depressive insanity.

A further analysis of the type of normal mental makeup may lead to a counterpart of the mixed condition.

Kraepelin has furnished us with a view-point helpful in the understanding of certain obscure clinical pictures, because it allows us to identify the unusual combinations and some mood abnormalities, thought disorder, and psychomotor reactions that we know and use as prognostic guides in the ordinary manic depressive attacks. A more careful analysis of these mixed phases is urged in order that we may recognize such clinical forms when they appear independently of typical manic or depressive attacks.

Further investigation of the types of mental makeup, out of which manic depressive attacks develop, is most important, and may throw light on the peculiar combinations of symptoms seen in the mixed phase of manic depressive insanity.

I am indebted to Dr. H. Douglas Singer, of State Psychopathic Institute, Hospital, Ill., for calling my attention to the differentiation made in Kraepelin's last edition between mixed states of manic depressive insanity and involutional melancholia.

I am also indebted to Dr. H. B. Carrel, superintendent Jacksonville State Hospital, for his kindness in permitting me to report and use the above cases, and also to Dr. R. T. Hinton, chief of staff.

NOTE.—This article was read before the Illinois State Hospital Medical Society at Elgin State Hospital, April 12, 1911.



## INHERITED SYPHILIS \*

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CHICAGO

"For fate has wove the thread of life with pain,  
And twins ev'n from the birth are misery and man."

Syphilis has been known and studied by competent observers for the past four hundred years; ever since Columbus returned from his voyage of discovery to what is now Santo Domingo, Hayti, when his crew introduced it into Italy, Spain and Portugal, from whence it spread as a blight over all of western Europe and back to America again.

With Santo Domingo as a starting point it has been traced across the Caribbean Sea and along the lesser Antilles to South America, beyond the Andes to Peru where archeologists find traces of its probable existence among the remains of the ancient symbolic pottery of a people which inhabited the land before the time of the Incas, and through legend to a time known as "Purumpacha," or "the time when there was no king"; in other words, to the neolithic age. One writer goes further and in his most interesting paper<sup>1</sup> of recent date offers a theory that it existed as the title of his thesis has it, "Before Speech Was," that is, in the trogloditic age, "Before Adam," originating through bestialities practiced by primitive man on the alpaca llamas of which his herds consisted. It has been said to have existed in Japan for fifteen hundred years, and syphilitic bones have been found in the mounds of a prehistoric people in various states of our own country, especially in Tennessee, while the translation of ancient Egyptian papyri dating back some seven thousand years show reference to what is apparently the disease at that time, that is, five thousand years before the Christian era.

The existence of a pre-Columbian syphilis in the "Old World" is, however, denied by many writers<sup>2</sup> and it was not until 1529 when Paracelsus first asserted that it occurred in an inherited form. Since that time this type has been generally known as "hereditary syphilis," but to-day other terms have been applied to it by writers who have objected, and rightly, to the term "hereditary." In this regard Lucas<sup>3</sup> seems to have summed up the matter most concisely when he says "of the three terms applied to this disease, congenital, hereditary, and inherited, I prefer the third. Congenital, beside being objectionable in form and suggestion, is not universally true. Hereditary suggests something that may be passed on indefinitely, while inherited implies only something derived from parents, as for example fortune or misfortune, which is detachable."

In the latter part of the eighteenth century inherited syphilis was studied by numerous French observers, and in the nineteenth century the works of Diday, Hutchinson and a host of others have left but little to be added to our knowledge of its symptomatology.

\* An address read before the Evanston branch of the Chicago Medical Society, Jan. 26, 1911.

1. Ashmead: *Am. Jour. Der. and G. U. Dis.*, 1909, xiii, 552.

2. Block, Ivan: "A System of Syphilis" (Power and Murphy), 1908.

3. Lucas: *Br. Jour. Der.*, 1908, p. 250.

Its pathology has been about completed by competent workers all over the world, and with the discovery by Schaudinn and Hoffman five years ago of the *Treponema pallidum* such a stimulus was given to the study of luetic infection and its manifold manifestations from all stand-points, that this too seems to have reached a state of almost accurate knowledge. Then followed the various serum tests as aids to diagnosis, and now the world famous "606," arseno-benzol, or salvarsan, has once more brought the honored name of Paul Ehrlich to the tongue of all civilization. In short, regarding syphilis, its etiology, symptomatology, pathology, diagnosis and treatment have, especially at the present time, been gone into so thoroughly, rewritten and revised and the results spread before not only the medical profession, but the laity as well, that now "he who runs may read."

It is with these facts in mind that I approach with some hesitation a topic so well and so universally understood, and fear that any paper that I may read on the subject will assume a tedious form.

The observation that syphilis occurs as an inherited disease in the truest sense of the word, and is transmitted to posterity as such, was made, as has been said, very early in its history and the accumulated experience of the years has but confirmed the truth of this observation.

The fact of the existence of the inherited type has never been questioned but the mode of its transmission has been the subject of many and bitter debates and many of the highest authorities are still far from being at one regarding some of the questions that have been propounded.

More especially is this true of the respective rôles played by the paternal and maternal organisms in the procreation of a syphilitic child. The well-known law of Colles and Beaumes states that "a child born of a mother who is without any obvious venereal symptoms, and which, without being exposed to any infection subsequent to its birth, shows the disease when a few weeks old, this child will infect the most healthy nurse whether she suckle it or merely handle and dress it, and yet this child is never known to infect its own mother though she suckle it while it has venereal ulcers of the lips and tongue."

It is a fact that very many mothers of syphilitic children remain without visible evidence of syphilitic taint throughout their lives, and are seemingly immune to luetic infection from any extraneous source. This apparently puts the onus on the male organism as the carrier of infection, and further infers that the placenta forms an impervious barrier to the disease, or at most allows it to penetrate in an attenuated form which is unproductive of symptoms.

The view that such mothers were not only immune but were also free from luetic taint was held by the majority of observers as late as 1903. In that year Matzenauer<sup>4</sup> in a paper read in Vienna in which he took a view diametrically opposed to that generally accepted, stated that it was his belief that there was no such a thing as direct paternal transmission of syphilis, that all inherited lues was through the mother, and that the immunity of such mothers was due to the fact that they themselves had

4. Matzenauer: Wien. klin. Wchnschr., 1903, xvi, 175.

latent syphilis. These statements he backed up with some very cogent reasoning, but his ideas were very far from being accepted at the time. The discussion of his paper occupied six sessions of the society before which it was presented, and such eminent authorities as Neumann, Finger,<sup>5</sup> Kassowitz, Hochsinger and others bitterly opposed the principles which he had laid down, quoting case after case from their inexhaustible clinical material in their arguments against what one of them termed "secession" from accepted tradition.

Nevertheless, though Matzenauer's conceptions have become more and more generally accepted, there are many points which still await complete elucidation. In 1908 Lucas<sup>3</sup> in an address before "The Society for the Study of Diseases of Children" in England, taking the same ground as Matzenauer, said "to my mind inheritance from the father alone is now put entirely out of court, and it follows that the infection of a mother by her fetus can never occur, for how is it possible that a spirochete whose length averages that of the diameter of a blood corpuscle can penetrate an ovum one-two hundredths of an inch in diameter and multiply without destroying it? I lay it down as an axiom, that inheritance is invariably from the syphilized mother. This is supported by Colles' law."

He says further: "It would seem that when virulent the spirochetes penetrate the chorion or placenta and occasion miscarriages, macerated fetuses or premature birth; but when the virus is attenuated by time or treatment, the placenta forms a complete protection to the developing fetus, and it is the separation of the placenta at birth which allows infection to take place through the umbilical vein. Hence the regularity of the secondary exanthemata from a fortnight to three months after birth. In these cases the separation of the placenta is the first stage and corresponds to the chancre of acquired syphilis."

And again: "It is obvious that as the greater cannot be included in the less, a spirochete cannot be carried in a spermatozoon, but this does not exclude the possibility of its being conveyed by the fluid part of the semen."

Without attempting to express any personal opinion regarding these various arguments, it may be of interest to mention the fact that recently so-called "dark bodies" have been observed in syphilitic serum. These are supposed by some to be a quiescent state of the treponema. If this hypothesis prove true they may be found to play a not unimportant part in bringing about seemingly paradoxical conditions.

It is also of interest to note that Wassermann tests of the blood of women who have borne luetic children have been positive in almost every case. Irrespective of the manner of the transmission of syphilis to the unborn child, the fact remains that transmission does occur, and if the mother is syphilitic it is sure that her child will be. If the father is, the child in all probability will show signs of the disease sooner or later. In any event, this heritage occurs altogether too frequently and a most terrible legacy it is.

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5. Discussion, *ibid*, pp. 229, 263, 292, 325, 363, 392.

As is well known, women with untreated and active syphilis whose disease dates from the time of conception, or from any time within seven months after pregnancy is a fact, will abort at various dates following infection. The earlier the infection, the sooner will abortion occur, and each succeeding conception will be carried nearer to term until at last a viable child is born and there comes into the world a living human being, to be sure, but if the infection of its mother has been a severe one, a most hideous caricature of that most lovable creation, a clean, healthy human baby. Its face will be drawn and old looking. Lines apparently representing the accumulated cares of a ninety years' struggle in the clutch of circumstance will seam its face and brow. Its color will be either a dull, cachectic brownish-gray, or a livid bluish-red tinged with coppery-bronze in certain areas. Its hair, what there is of it, will be thin and dry; when it attempts to cry, its voice sounds like that of some tiny animal in distress and is hoarse and unnatural, being scarcely audible across the room. The umbilical cord refuses to become dry, and shows signs of gangrene. Fissures appear at its attachment, which bleed and ooze. Large patches of epidermis exfoliate from the skin of the abdomen and the inner sides of the thighs, leaving raw, moist surfaces which must be exceedingly painful and tender. It cannot nurse or even breathe in comfort, and in a few days it is dead, much to the relief of all concerned, and another life has been added to the list of those who have had to pay for the "sins of the fathers." This picture represents the worst phase, the macerated, moribund and yet half-living child whose short life presents but one redeeming feature, which is that in all probability it never realized how utterly wretched it was.

The next conception by the mother of such an infant, even though she receive no treatment, and especially if the father is receiving thorough antisypilitic medication, will, as a rule, result in the delivery at term of an apparently healthy baby that nurses without difficulty and whose cries are those of a normal child. In the course of a few weeks, however, or at most a month or two, the baby "takes cold." A slight elevation of the temperature is noticed, and there is more or less mucopurulent discharge from the nostrils. In nursing it must let go of the nipple to catch its breath, and it "snuffles" when it cries and when it sleeps. A diarrhea that is not easily controlled sets in, and the child becomes peevish and fretful, loses weight and shows a very apparent lack of nourishment.

At this time one of several things may happen which will give the clue to the cause of all this disturbance, provided it has not already been recognized, as it frequently is not, for syphilis has a way of cropping out in the most unexpected of places, and in persons who least suspect it. Usually the skin is the next organ to which attention is called. An eruption appears somewhere on the body or limbs of the unfortunate child, the character of which differs with the date of infection in respect to the time of conception, and with the virulence of said infection in the individual case. The more serious from the standpoint of prognosis are the bullous and pustular forms. A vesicular type is occasionally seen but is comparatively rare. While bullæ are seldom in evidence in cases of



acquired lues, they are the rule rather than the exception in the inherited form. Although this type of lesions may appear as a more or less scattered, generalized eruption, they are usually localized on the palms, soles and about the genito-anal region. They vary from two to four centimeters in diameter, are somewhat flaccid and contain clear or turbid fluid with an occasional admixture of blood. They are surrounded by a slightly inflammatory halo and as they break down may assume the characteristics of superficial ulceration, or dry up leaving the skin surface showing the signs of recent desquamation, tense and shiny and of a deep red color. Coincident with these there develop on the buttocks and over the inner surface of the thighs, about the genitalia and on the lower part of the abdomen, a number of rather large flat papules of a dull coppery-red, somewhat ill defined in outline and not raised to any great extent above the surface. These papules are usually accompanied by an erythema somewhat lighter in color, with which they blend, forming a broken sheet of inflammation extending over the regions mentioned. Again they may remain discrete, and becoming macerated by constant moisture from natural excretions, form the so-called "mucous patch of the skin," the condylomata lata or flat warts, which next to the true mucous patch are perhaps the most virulent of all specific lesions, that is, the most prolific source of danger to others.

In cases of less virulence a typical roseola identical with that of acquired lues may appear, but with by no means the same frequency is it observed. The small papular syphilids are also seen with more or less frequency and differ in no wise from those seen in adults except that they may be somewhat lighter in color and exhibit a less degree of induration. The pustular lesions in early inherited syphilis are seldom seen and when they do occur resemble those of the acquired form, and also like them make a very bad prognosis necessary.

If the child survive the stage of these eruptions, as is frequently the case even without efficient treatment, the next thing to call attention to the disease will, in all probability, be a gumma somewhere or a destructive process attacking the periosteal or subperiosteal tissues. These lesions do not differ essentially from those seen in the adult and may of course be located at any point. Frequently it is the phalanges that are attacked and the so-called syphilitic dactylitis occurs, which if it is not aborted by active treatment results in the loss of a joint and a useless finger. Gummata of the pericranium are not infrequent and occasionally small nodular or gummatous lesions make their appearance on the forehead, cheeks or other part of the face, and if untreated run the usual course of growth, softening and breaking down, followed by healing with permanent scar formation. During all this time there are lesions which attack the mucous membranes of the mouth especially, and occasionally those of the genitalia and doubtless the lining membrane of the intestinal tract as well. These correspond to the stage of the disease elsewhere. They may be, and usually are, of the type of the ordinary mucous patch.

but extensive ulceration of the tongue, soft palate or nares sometimes supervenes and always leads to permanent disfigurement. These then are the pictures of infantile syphilis of the inherited type:

1. Partial maceration of the new-born with semi-moribund condition and early death.

2. Apparent health at birth but within the first three months, snuffles, bullous or vesico-pustular lesions especially of the palms and soles, followed by various other lesions, diarrhea, cachexia and death.

3. Macular or small papular eruptions occurring somewhat later and unaccompanied by more serious lesions, making a more hopeful prognosis possible.

4. Recurrent forms appearing in children whose early symptoms have been so slight as to pass unnoticed, or if seen their import not being appreciated, were neglected, i. e., nodules, gummata and deep ulcerations chiefly of the face, head and long bones, especially the phalanges and tibia, leading to permanent deformity.

When the child with inherited syphilis has passed the age of infancy, having successfully withstood the attacks of the disease, and by means of care and proper treatment has seemingly recovered from its various troubles, there comes a period of quiescence, and it is not until it nears puberty that attention is again called to the specter of disease which overshadows it. Usually the individual is of stunted growth, poor mentality, and late in coming to maturity both mentally and physically. When the second teeth appear the central incisors are notched, and form the picture of the well-known "Hutchinson teeth"; linear scars, the remains of preceding lesions, radiate from the corners of the mouth, interstitial keratitis, and disturbances of the inner ear are of common occurrence. The nose may show the lack of a bridge and be of the "saddle" variety, and perhaps one finger has a terminal phalanx which dangles as a useless appendage at its tip.

Puberty in both sexes is late and may never take place normally, as the sexual organs fail to develop. The skin is thick and opaque, the forehead large and protuberant, sometimes showing a furrow above the brows. The hair is thin and dry, the nails fragile and easily broken, while the tibiae exhibit the forward bowing known as "saber formation." Affections of the nervous system are of frequent occurrence. Fusiform enlargements of one or more nerves accompanied by motor paralysis, wasting and anesthesia of the parts involved is seen. Paralysis of the cranial nerves, hemiplegia from the endarteritis which is part and parcel of the entire disease, epilepsy, idiocy and juvenile dementia are some of the more serious sequelæ. I will not attempt to picture these various pathologic conditions in detail, nor would it be possible for me to do so in this short paper. A bare outline of the symptomatology of inherited lues is all that I wish to present, and now permit me to add a few words that may perhaps brighten some of the more somber tints that I have been forced to use in my brief epitome of this most terrible affliction.

First, in regard to the present frequency of inherited syphilis: disregarding the oft-repeated statement that the entire human race is now nearly completely syphilized, a statement incapable of proof no matter how much truth there may be in it, and I think that there is a great deal, it is my belief that the ratio of 18 to 20 per cent. of the entire population suffering from syphilis is to-day too great. In a paper recently read before the Chicago Medical Society, the essayist stated that there were two million *known* syphilitics in the United States. I do not know where he obtained his data as these are notably hard to come at through the fact of the disease being never reported when it is possible to conceal it, the only dependable statistics being those of the insurance companies in their actuary tables, which of course cover but a small proportion of the population. But assuming that his figures are correct, and placing the number of unknown and hidden cases at eight million, this makes the percentage at ten and not twenty, the total population of the country being about one hundred million. Of these the very large majority is of the acquired type, and among those so afflicted comparatively few, let us hope, knowingly reproduce the disease in their children, and in the ignorant, criminal or careless ones the results of treatment are daily showing, so that there are fewer dead-born and of the living a gradually decreasing number who show the indelible stigmata herein referred to.

In the second place, much might be said in regard to the diagnosis of inherited lues apart from laboratory methods. Not every baby born with a bullous eruption is luetic. The bullæ appearing in infancy may be, and most likely are, due to an infection with the ordinary staphylococci, an impetigo vulgaris, or they may be the expression of an urticaria bullosa, and if they appear a little later in life when slight traumatisms are apt to occur to the hands, feet and knees, the inborn condition of epidermolysis bullosa hereditaria may be discovered. An attack of erythema bullosum, while it is not frequent in childhood, is by no means unknown. The erythemato-papular eruptions about the genitalia may be merely an eczema intertrigo or a dermatitis caused by the irritation of the tender skin by acid excretions.

The macular lesions caused by various drugs, the administration of which has been made necessary by some other cause, have frequently been diagnosed as a syphilitic eruption, and a cankered sore mouth for mucous patches. The appearance of extreme age coupled with cachexia and an abnormal color is quite as characteristic of marasmus from any one of a variety of causes as from lues. Even the Olympian forehead, the notched teeth and the scaphoid scapulæ of recent notoriety, can and do come from malnutrition, be the underlying cause what it may, apart from the ravages brought about through invasion of the living organism by the *Treponema pallidum*. Therefore, the diagnosis must be made from a complexus of symptoms and not from any one alone.

It is of interest at this point to note the results of a series of experiments which have been recently carried out and which illustrate some of

the statements just made. The medium in which tubercle bacilli had been grown was filtered through a germ-proof filter and introduced in less than lethal doses into the circulation of guinea-pigs, in order to observe the effects on the young produced by animals so treated. When the male alone was inoculated previous to his mating with the female, the resulting brood had one or two dead-born, and of the remaining young one or two were feeble and sickly. When the female alone was injected the results were the same except that the number of dead-born was greater, and the number of healthy living young was but one or two out of a litter of six or eight. When both male and female were the subjects of experiment the effect on their progeny was not greatly different from that obtained by treatment of the female alone. The analogy here presented between these experiments and the various problems brought to mind by the study of the symptom-complex of syphilis is certainly suggestive.

I have purposely omitted all reference to the manifestations of visceral syphilis in its inherited form as its consideration would lead me too far afield. Neither will I say anything regarding its general pathology; and as the treatment of inherited lues is but that of the acquired type modified, there is no necessity of mentioning it.

Regarding the question as to whether syphilis can be transmitted beyond the second generation, the answer cannot be given categorically. The general consensus of opinion seems to be that it cannot. Gaucher, however, presented a paper<sup>6</sup> in 1907 in which he classed a number of affections such as adenoids, etc., as "quaternary syphilis." These suggestions were not taken seriously. Fournier has collected 116 cases, fifty-nine of which he thought were to be relied on as showing transmission to the third generation. The literature of the subject, however, teems with cited instances which seem to prove the contrary.

In conclusion it is perhaps permissible to make a general prognosis; and, recalling the fact that syphilis is to-day far from being the scourge that it has been in the past: whether this is due to the syphilization of the entire human race, or to the results of treatment which are beginning to show, is immaterial and the fact remains: it is my opinion that while I personally do not expect to live to see the day when there will be no such condition as that which has been announced as the title of my paper. I do believe that that day will come, and that with the gradual but sure advancement of knowledge along lines similar to those which have recently been made clear to us, syphilis will in time become an almost negligible disease in respect to mortality and heredity and will be confined to those who must suffer for their own indiscretions, while the innocent and the unborn will no longer be made to pay for the transgressions of others.

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6. Gaucher: Trans. Int. Cong. Der., 1907, p. 777.

7. Zeisler: Ill. Med. Jour., October, 1910.

8. Heller: Berl. klin. Wchnschr., 1909, xlv, 1315.

9. Grindon: Jour. Cut. Dis., 1910, xxviii, 284.



## DIPHTHERIA\*

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Diphtheria is an acute specific infectious disease which usually begins in the throat or upper air passages, but which may attack any mucous membrane or even the skin, and is characterized by the deposit of a yellowish or grayish yellow adherent membrane which is due to a specific microorganism known as the Klebs-Loeffler bacillus, and by certain other constitutional symptoms due to toxins elaborated by their growth.

Diphtheria was known to Hippocrates, and Asclepiades, 100 B.C., performed the first tracheotomy, while to Bretonneau we owe the first classical description, from whose writings has evolved its terminology, which literally means membrane.

The diphtheria bacillus was isolated, described and cultivated by Klebs and Loeffler in 1883 and 1884. It is 2 to 6 microns in length and 0.2 to 0.6 microns in width. It stains by all the anilin dyes and is Gram positive, but stains best by Loeffler's alkaline methylene-blue. The bacillus is naturally aerobic, that is, grows best in the presence of oxygen, but may grow in the absence of that element and is therefore termed a facultative anaerobe. It is negative in many of its biologic characters, being non-motile, non-flagellated and non-sporogenous and will grow on all artificial media but best on blood-serum. It grows best at body temperature and dies at a thermal death-point of 58 or 60 C. It is easily killed by disinfectants and succumbs to direct sunlight in a few hours.

Diphtheria along with tetanus should be classified among the toxic diseases. As a matter of fact the symptoms met with in cases of diphtheria are due to the effects of the toxins secreted by the bacilli and taken up by the circulation, and not to the presence of the organism in the blood as maintains in typhoid, pneumonia, etc. This has been proved by the absence of the germ in the blood of those sick with diphtheria and by the absence of the organism in the distant organs of those recently dead of the disease.

Furthermore, Roux and Yersin by the filtration of cultures through unglazed porcelain have been able to separate from the bacilli a toxalbumin not wholly unlike the toxalbumin found in the venom of poisonous snakes, but less rapid in action, and which injected under the skin of rabbits and guinea-pigs produces the blood-poisoning, kidney and nervous symptoms found in true diphtheria.

Roux and Yersin further demonstrated that, when a fatal dose of the toxalbumin or of the virulent cultures was injected subcutaneously, marked prostration with an elevation of temperature of two or three degrees F. rapidly followed, accompanied by, first, a slowing of the heart beats due to vagus irritation, and later, by a rapid irregular heart beat and death due to vagus paralysis; but, if the injection falls short of a fatal dose, the paralysis does not occur or occurs much later and usually

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\* Read before the Saline County Medical Society, ??????

affects the nerves of the extremities, deglutition or accommodation. So it follows, as an obvious fact, experimentally as well as clinically, that diphtheria is a toxemia and that the toxins have a selective action for certain motor nerves with a tendency toward paralysis whether or not the case be mild or severe.

To this end therefore, Professor Behring conceived the idea of introducing into the blood of those infected, an antitoxin which neutralized or caused to be neutralized the deadly toxins with which the blood was teeming, by developing antibodies which combined with the toxic bodies in an innocent and harmless combination which will be discussed more thoroughly in its proper place.

Now that a definition and the true nature and character of diphtheria has been considered we may with propriety turn to the etiology. Aside from the direct etiologic factor which is the Klebs-Loeffler bacillus as before stated, we may consider the indirect or predisposing causes.

In most large cities the disease is endemic and is occasionally agitated by outbreaks of epidemics of more or less severity. In country places it prevails almost solely as an epidemic having arisen in some inexplicable manner and, before its nature is recognized, many persons are exposed. Diphtheria does not arise sporadically and every case has its origin in a previous case either directly or indirectly.

The bacilli may enter through the inspired air; they may be taken into the mouth with toys or other articles; by kissing or the filthy habit of chewing gum after others, frequently practiced among school children; by the public drinking cup, too often seen in schools and other public places.

Direct infection is the cause in the great majority of cases and is usually disseminated by those recently recovered from the disease or those suffering from a mild and unrecognized attack. These facts are proved by the presence of virulent bacilli in the mouths of those convalescent for several weeks after the disappearance of the membrane and all other symptoms, and by the presence of virulent germs in the nose and throat of those suffering from what seems to be a simple rhinitis or catarrhal pharyngitis. In reality these cases have a diphtheritic infection and are going about scattering, as it were, everywhere, in the school room and the churches, on the streets and in private homes, the seeds of an approaching epidemic.

Indirect infection is not uncommon and may occur as before stated, through the use of toys, books, clothing or the bed of the patient; from carpets, furniture, wall-paper or hangings of the sick-room. Diphtheria may be carried by a third person, but rarely except by one who has been in close contact with the patient, as the physician or nurse. The frequent attack of physicians and their families and nurses during epidemics bears witness of this danger.

Diphtheria prevails during the whole year, but is more frequent during the school, church and theater seasons, which has given rise to the idea that it predominates during the cold months.

Girls are much oftener attacked than are boys, which at first thought would lead one to believe that the female sex is more susceptible than the male, but which in reality is due to the closer contact of the former to such patients, their clothing, bedding, and the sick-room.

Individual susceptibility and resistance are important predisposing factors. Some are exceptionally predisposed and contract the disease on the slightest exposure while others may be in constant attendance on those suffering with the malady and as constantly resist infection. This we term "natural immunity." Very important predisposing causes are chronic catarrhal inflammation of the nose and throat, adenoids, enlarged tonsils, cavities of carious teeth and other infectious diseases: as scarlatina, measles, pertussis and mumps. The period of incubation is from two to five days and immunity is short, not lasting longer than from two to five months.

The symptoms of diphtheria depend on the location of the disease and the severity of the attacks, ranging from a slight rhinitis or pharyngitis with little or no membrane and void of possibly all constitutional symptoms, to a severe fulminating type characterized by the production of a dirty, heavy, necrotic membrane which has a tendency to spread rapidly to other parts and which has a fatal ending in twenty-four or forty-eight hours by toxemia or laryngeal stenosis.

As physicians, these two extremes are not often seen by us, or if seen, there is little time left for much effective work or observations; therefore our experience must of necessity be limited to those cases coming between these two extremes, so to this end I shall endeavor to discuss the symptoms of nasal, postnasal, tonsillar, pharyngeal and laryngeal diphtheria respectively. First prefacing their separate description by the assertion that the constitutional symptoms such as paralysis and parenchymatous degenerations of the internal organs may and often do follow the milder as well as the severer forms and are due solely to the action of the toxins and have very little, if any, relation to the presence or absence of a distinct membrane but which may to the clinician on physical examination reveal only a red granulated, necrotic looking surface.

Nasal and postnasal diphtheria may be and often are of the benign or milder type and may in children of school age attract very little attention, the patient being permitted to continue in school scattering as it were everywhere, in a suitable soil, the seed for an extensive epidemic. Diphtheria of the nose may be primary or secondary. The upper lip is red and excoriated by the irritating discharge. The child "snuffles," sleeps a great deal and takes food poorly. The glands of one or both sides of the neck are swollen. Nose-bleed occasionally takes place or a thin, bloody discharge is noticed on the handkerchief. A membrane when present is usually situated on the septum but may involve the whole Schneiderian membrane and may be removed or blown out as a complete cast of the nose. The nasal occlusion is at first often thought by the parent to be due to a cold in the head or a foreign body in the nose. The fever may be slight, especially in older children, and the whole clinical course be one of a benign type, ending spontaneously in a few days, or it

may be malignant from the first and terminate in death scarcely before the child is suspected ill.

To tonsillar and pharyngeal diphtheria a symptom-complex is common and in a case of ordinary severity the child for a day is listless, has loss of appetite and often vomits whatever he eats. At the end of this time sore throat is usually complained of and a temperature of 100 to 102 F. is noted which is in striking contrast to the higher temperature of 104 or 105 F. of a strepto-, staphylo-, or pneumococcal tonsillitis or pharyngitis and which is more often preceded by a chill rather than chilly sensations. The pulse is accelerated, ranging from 100 to 120. Renal and intestinal elimination is scanty and retarded. Nose-bleed is not uncommon even where there is no involvement of the nasal passages.

The glands at the angle of the jaw are usually slightly enlarged. When the child is old enough, headache and pain in the back and limbs are usually complained of. The face may be flushed or cyanotic, depending on the degree of toxemia, and a rash sometimes appears resembling scarlet fever in some cases and measles in others. These symptoms occurring in a child usually suffice to call the attention of the physician to the throat and an examination is made which usually, but not in all cases, reveals the presence of yellowish or grayish-yellow membrane on the tonsil, posterior pillar, soft palate or pharynx and which is adherent and leaves a raw bleeding surface when removed.

The milder forms are not often seen by the doctor or if seen are too often treated as simple sore throat and permitted to run at large, feeding as it were with oil the conflagration of an epidemic which we are trying to extinguish. In the severer forms, the child is suddenly prostrated, but the temperature is not much above 102 F. and the pulse ranges from 140 to 160. The skin is dusky or dingy blue, due to vaso-motor paralysis from an overwhelming toxemia. He sinks into a stupor or comatose condition from which he is aroused with difficulty. There is a sweet, sickening, foul odor on the breath which every clinician of experience cannot fail to discern.

Laryngeal diphtheria may be primary but is generally secondary to a pharyngeal or postnasal diphtheria. When secondary to a diphtheritic pharyngitis or rhinitis it is a part and parcel of those conditions plus the addition of the laryngeal symptom which will be presently described. One of the first symptoms noticed in a laryngeal involvement whether primary or secondary is a cough which has a characteristic dry, brassy ring which is far more easily recognized than described. This cough is accompanied by hoarseness which deepens with the approach of night. At first both the cough and the hoarseness may disappear or be less marked during the day, only to return with greater intensity during the next night. Dyspnea now becomes a prominent symptom and, unless relieved or the membrane formation is but slight, cyanosis soon develops. Now the patient is aphonic, very nervous and anxious; the facies is characteristic, pale, pinched and haggard with an expression conscious of approaching death. The accessory muscles of respiration stand out like whip cords and the intercostal spaces move in and out with each respira-



tion. Convulsions and spasms are common. The child gradually sinks into coma and cyanosis deepens. The pulse accelerates, respiration becomes short and gasping and death closes the scene.

The diagnosis of diphtheria is not always an easy matter for the clinician's consideration, so to this end state and municipal boards of health have established laboratories and bureaus for diagnostic purposes and furnished at public expense laboratory facilities for those physicians who do not possess such advantages or who from lack of time cannot go into such minute differentiations. Therefore it goes without saying that, while the clinical signs just previously described under symptomatology and almost always present in a varying degree and are highly suggestive, they are *not* positively diagnostic. No diagnosis can be positive without bacteriologic proof of the organism in the throat, nose or other mucous membrane of the case in question. Nor does the finding of virulent bacilli in the nose, throat or on other mucous membrane of a healthy individual conclude the diagnosis of a diphtheritic infection, for as previously stated, virulent germs may and often do remain in the throat and nose of those recently convalescent for months after recovery. And pure cultures have been made from the throats of perfectly healthy individuals. Then what constitutes a diagnosis of diphtheria?

To answer this question intelligently and thoroughly would necessitate a complete rehearsal of the etiology, pathology and symptomatology of diphtheria in all of its forms and locations from the slightest benign nasal infection to the most malignant throat and laryngeal involvement. So, to spare you this trouble, I shall venture the assertion that no clinician will err to any appreciable degree in his diagnosis if he depend on the three groups of *findings* which I am about to relate and that the absence of either of the *three* will absolutely negative a diagnosis unless there be an obvious reason for the absence.

The three groups of findings to which reference is made are, first, the constitutional symptoms of toxemia as previously described; secondly, the local findings on the mucous membrane which is a necrosis of the upper layers of the mucosa with or without a membrane, and, thirdly, by the microscopic finding of the Klebs-Loeffler bacilli from a smear or culture.

A differential diagnosis is to be made from acute tonsillitis, streptococcic pharyngitis, pneumococcic sore throat, mucous patches of secondary lues and mycosis of the pharynx.

The differential diagnosis between acute tonsillitis and diphtheria is as follows: in the former, the onset is sudden, usually with a chill followed by high fever, 103 to 105 F., while in diphtheria the onset is gradual, usually without a chill. The temperature is not so high, ranging from 101 to 103 F. Vomiting is common.

On examination of the throat of a patient suffering with acute tonsillitis you will see the tonsils much inflamed and enlarged. The tonsils may show the presence of a false membrane which does not pass from the tonsils to the pillars or fauces and which can be removed easily with a swab leaving a smooth, clean surface. The membrane does not reform

when removed and is limited to the tonsil. In the mouth of a diphtheria patient you will see things quite different; the tonsil is not usually much swollen and there is not so much hyperemia as is seen in tonsillitis, especially about the soft palate. The membrane is found to be very adherent; if removed it leaves a raw, bleeding surface and rapidly reforms again. The membrane may also be found extending over the pillars to the soft palate or even on the posterior pharyngeal wall, which condition never happens in tonsillitis. A bacteriologic examination in acute tonsillitis will reveal the staphylococcus, streptococcus, pneumococcus or the pseudo-diphtheria bacillus, while in diphtheria there is always found the Klebs-Loeffler bacillus.

Diphtheria must be differentiated from streptococcic and staphylococcic sore throat so often seen in scarlatina, measles and other infectious diseases of childhood as well as in adults. The membrane formation is almost identical with that of diphtheria in that it is firmly adherent to the mucosa, but the symptoms are much more alarming, the pain is more intense, the soreness is more marked and the temperature is higher, ranging from 105 to 106 F. A bacteriologic examination is the only way to differentiate between these two conditions.

The mucous patches of syphilis have more than once been mistaken for diphtheritic exudate. But the symmetrical situation of the patches and their filmy character, the long time the sore throat has existed, the enlargement of the suboccipital and femoral glands as well as those at the angle of the jaw, the presence of a syphilitic rash and the falling of the hair are sufficient to differentiate the two conditions. Where doubt still exists a bacteriologic examination will settle the question.

In mycotic disease of the pharynx careful inspection under the light of a head mirror will show the whitish elevations studding the mucous membrane, each a separate elevation, and not confluent, as maintains in diphtheria. There is seldom any rise in temperature or any other constitutional symptom. Bacteriologic examination fails to detect the Klebs-Loeffler bacillus but shows the branching heaps of the mycelium *Leptothrix buccalis*.

As to prognosis we should be very reserved, for mild cases of diphtheria may suddenly and very unexpectedly take on a malignant and virulent form, and on the other hand those cases which seem hopeless at first may abate in a few hours and a speedy recovery follow. The severity of the epidemic and the prevailing type of the disease should also be taken into consideration before passing opinion as to the termination of the case. In some years the type is a very mild one and the death-rate is not more than 5 per cent., while in other epidemics the death-rate is 30 to 40 per cent.

There is no disease in which early, prompt and efficient treatment so favorably affects the prognosis as in diphtheria. Therefore, let us urge that time, which may be so valuable, be not wasted in waiting for further developments before treatment is begun. Nor be too hasty to dismiss a case of sore throat as acute tonsillitis or pharyngitis until you have first

assured yourself that you are not merely guessing or playing a game of chance in which the wager is the life of an innocent child.

The prognosis is always more grave in laryngeal diphtheria than in any other form and in those under the age of three, than in older children. But it matters not whatever be the condition the prognosis is always more favorable when the antitoxin is used than when it is not, and it has been conclusively shown that when the antitoxin is used early, say within the first thirty-six hours, the mortality is practically *nil*, but rapidly rises after the second day and seldom does any good after the sixth or seventh day.

The treatment of diphtheria is the antitoxin *per se* and is not a means of last resort as is so commonly supposed by the laity. For the sake of order and convenience of description I shall present this subject of my paper under four general heads: viz., prophylactic, specific, local and constitutional treatment.

By prophylactic treatment we mean the isolation of all cases by a rigid quarantine until the patient is fully and completely recovered and is free from virulent germs in the throat and nose. By thorough and effective fumigation of all apartments used by such patients before being occupied by others, and an immunizing injection of Behring's serum to all children exposed.

As before stated the serum treatment for diphtheria is the treatment *per se* and should be administered to each and every case regardless of its mildness or severity, location of the membrane or the age or condition of the patient.

The time at which specific treatment is begun must be early, preferably the first or second day of the membrane if the best results are to be expected. But the quantity and frequency of the dose may vary with the doctor and his patient. Some physicians in an ordinary case give only a single injection while others give two, three or more doses. The number of units for a single injection will vary as stated with the physician and the age of the patient and range from 500 units to as many as fifteen or twenty thousand units. But the dose of antitoxin cannot be measured in units, so it has been my custom to start with the maximum dose and repeat the same every six, eight or twelve hours until the membrane begins to disappear and the constitutional symptoms begin to abate. And when given prior to the third day of the membrane it has been my good fortune to meet with happy results indeed! So I should not hesitate to repeat the maximum doses until effects were obtained whether it be 1,000 units or 100,000 units were given in a given case. As years go on additional experience declares a revelation no less divine than God Himself in this gift of Professor Behring to science for suffering humanity. There is no longer reasonable ground for skepticism on the part of intelligent physicians against the use of diphtheritic antitoxin in the treatment of that once dreaded malady.

The local treatment consists of a direct hand to hand combat with the offending intruder and aims at exterminating his species as soon as possible and rendering those that persist in propagating their kind less



vicious in their habits. This is accomplished by the use of antiseptic washes, gargles and sprays, all of which tend to accomplish the same purpose as illustrated above. For this the pharmacopeia offers us an extensive variety for selection, ranging from a weak solution of boric acid and  $H_2O_2$  to the more destructive caustics.

The ones most potent for good and less baneful for harm are Loeffler's solution, mercuric chlorid 1 to 1,000, phenol 3 per cent., the standard alkaline antiseptic solution (Casselberry) and hydrogen peroxid 50 per cent.

The constitutional treatment is obtained by absolute quiet and rest in bed in a comfortable, quiet room. A liquid diet, as milk, beef juice and soups, is generally recommended, but I am in the habit of allowing almost any wholesome food in small quantities which the caprice of their appetite may demand. Whisky in the form of warm toddies, I believe to be excellent, especially if the heart seems to lag or the digestion becomes fickle.

The complications and sequelæ most likely to occur are bronchopneumonia, paralysis, myocarditis and nephritis, and are treated as if originating from any other cause.

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WHY THE VERMIFORM APPENDIX SHOULD USUALLY  
BE REMOVED WHEN AN ABDOMINAL INCISION  
MADE FOR OTHER CAUSES IS AVAILABLE AND  
THE CONDITION OF THE PATIENT ADMITS  
OF THE ADDITIONAL OPERATING

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According to the embryologists, among others notably the observations of Professors Mall and Max Broedel on fifty-four human embryos detailed in the work of Kelly and Hurdon,<sup>1</sup> the vermiform appendix is a part of the embryologic cecum which this organ has discarded, dropped from development and has been trying to get rid of since about the eighth week of intra-uterine life, but has unfortunately succeeded in doing so only in rare instances. At that time the transient appendix, a small bud at the end of the primitive cecum, disappears while the upper or proximal portion of this cecum begins to expand to form the future true cecum and leaves its distal portion undeveloped as a superfluous part destined to obliteration or to form the well-known mischief-maker. A structure thus discarded lacks the vitality, hardihood and capacity to ward off diseases that come to an organ that renders a regular service. An organ that does this will not be found, as Horsley<sup>1</sup> says, to vary so extremely in its size, shape, consistency, composition, position and blood supply.

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1. Kelly and Hurdon: The Appendix and Its Diseases.



That it has no known function and that it is hardly possible that any real function will be generally accredited to it in future, is evident from the uniform and undisputed experience with thousands of cases, that its removal is entirely and always innocent of any known harmful effects, but is followed in most instances by improvement of some kind. Nowick<sup>2</sup> made one of the best studies of the appendix by most careful and systematic macro- and microscopic examination of 420 post mortems and eighteen post-operative specimens, and by noting, in conjunction therewith, the chief points in the clinical history of many of them. He likens the appendix to the tonsil in composition and action, because it contains much lymphoid structure in its walls. E. M. Corner<sup>3</sup> thereupon calls it the "intestinal tonsil" and attempts to ascribe to it the function of absorbing and annihilating the many microorganisms that infect the cecum. But he contradicts himself at once by saying that "when it is removed, its function is taken by neighboring tissues, and Nature is relieved of a tube containing actively poisonous material." Assuming that this tube does take care of some of those noxious elements, its service can be but as a drop in the bucket when compared with the amount of such service that is needed there. Theoretically, there is hardly a more serious menace conceivable than the confining of such lymphoid tissues within a tube whose trophic conditions are subnormal and whose lumen communicates by a narrow opening with the intestinal lumen at a point where bacterial flora of the latter are most abundant and dangerous.

Such a thing would resemble a bomb more nearly than an organ, as part of a healthy body. That this picture is not greatly overdrawn is evident from the sudden, severe and disastrous course so frequently observed in cases of acute infection of the appendix, leading in a day or two to gangrene of it or to perforation and extended peritonitis—conditions no less serious than obtain in cases of strangulated herniæ and requiring, as best relief, equally prompt and good emergency surgery which is often not available. Why then wait for the need of this in one case more than in the other! To be thus overtaken by either of these deadly freaks of disease spells disaster, such as is familiar to every surgeon and intelligent general practitioner; while but one in several hundred of the same men will meet a case where the appendix comes into consideration for real use as in appendicostomy. Appendicitis occurs so very frequently. The chances for an early diagnosis and operation are often so meager, and the loss to the patient in a late operation in rate of mortality, degree of morbidity, need of prolonged drainage, tedious convalescence, liability to hernia and trouble from intestinal adhesions later on is so great that any one who fully understands the subject may be expected to prefer to have his or her appendix removed at the first incidental opportunity for doing it safely. But, aside from the more striking phenomena incident to acute appendicitis, about which physicians and the public have become pretty well educated, there is a wide domain of at least functional disorders of the organs of digestion and assimilation in which the

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2. Virchow's Arch. f. Path. Anat. u. Physiol., Feb. 2, 1909, S. 177.

3. Ann. Surg., October, 1910.

"chronic appendix" has in recent years been discovered by many observers as plying its stealthy and baneful influence. "Appendiceal dyspepsia" is spoken of by numerous writers; and all surgeons of considerable experience in this matter have repeatedly seen it, and sometimes also constipation, disappear promptly after removing such an appendix, which in other instances also masquerades as gall-stones or gall-bladder disease, bilious attacks, ulcer of stomach and duodenum, renal and ureteral colic, etc. B. G. A. Moynihan<sup>4</sup> of Leeds, England, says one form of chronic appendix produces symptoms resembling those of ulcer of the stomach, but with more caprice. Gastric ulcer symptoms come in some order; not so with appendix dyspepsia. There is no regular period of absence of pain after meals as in ulcer. Not better in warm weather as in ulcer. Is more frequently made worse by exertion than ulcer is; causes more vomiting after meals and for a variable time than occurs after ulcer; says he has seen blood in considerable amounts vomited in a dozen of such cases of stomachs functionally disturbed by a chronic appendix, three pints in one of them. They are the cases of pyloric spasm, he says, that may be observed contracting in such cases when the abdomen is open and before the parts have been handled, while the essential organic characteristics of ulcer of stomach and duodenum are absent. He says vomiting after meals is the most constant of all symptoms of appendix dyspepsia.

By Graham and Guthrie<sup>5</sup> the chronic appendix is regarded as coordinate with gall-bladder or stone disease and ulcer of the stomach or duodenum in producing epigastric and other abdominal symptoms; and they present good differential diagnostic clinical pictures of this triumvirate in abdominal pathology. They say the average age of gall-bladder patients is 40 years; of ulcer patients 45; and of appendix patients 34 years. Again, on the side of pathologic anatomy on this subject: McCarthy and McGrath<sup>6</sup> have found that the lumen of the appendix was partially or completely obliterated (sign of preceding inflammatory process in it) in 17 per cent. of 2,549 cases of general autopsy; in 17 per cent. of seventeen cases of pyloric spasm; in 23.5 per cent. of 1,005 cases of appendicitis; in 26.9 per cent. of fifty-two cases of gastric and duodenal ulcers; in 44.8 per cent. of 118 cases of cholelithiasis; and in 52 per cent. of fifty-seven cases of cholecystitis. Thus showing that during operation for gall-bladder and stomach disorders of this kind examination of the appendix finds this positive evidence of disease in it, more frequently present than it is found in general autopsies and operations for appendicitis itself.

During the last ten years it has been found that a small nodular enlargement usually at or near the tip of the appendix is found in about 0.5 per cent. in all appendices removed for appendicitis or otherwise. These little tumors are usually discovered afterward only by careful examination with the microscope and are found to be composed usually of spheroidal cells by some likened to "basal-cell" carcinoma of the skin or rodent ulcer which is known to be of slow growth and usually devoid

4. Brit. Med. Jour., Jan. 29, 1910.

5. Jour. A. M. A., March 9, 1910.

6. Ann. Surg., December, 1910.

of metastases. These growths begin in or near the submucosa and invade the other structures in the wall of the appendix and mechanically occlude its lumen in such a manner that pathologists usually class them as carcinoma. This was, however, left somewhat in doubt and indefinite in the discussion on this subject at the last meeting of the German Pathological Society,<sup>7</sup> because these tumors occur in early life, mostly between 10 and 40 years, do not form metastases, and do not recur after removal usually. Some explain this by the fact that they are removed so early, because they soon cause a perforation of the appendix, as Kelly<sup>8</sup> says, or cause appendicitis otherwise and induce a timely extirpation.

In 1908 McWilliams<sup>9</sup> collected 105 cases of this kind and McCarty<sup>10</sup> during the past year reported twenty-two as found among 5,000 appendices removed in one institution.

The appendix is too tricky and treacherous to be trusted when it appears normal. In two nurses that were operated on by me for growing invalidism due to retroversion, I had to do an emergency operation afterwards for violent appendicitis. In neither of them had there ever been the slightest suspicion of an unhealthy appendix, nor was there any at the time of first operation. In the first one, therefore, I did my then preferred bi-inguinal celiotomy and did not see the appendix. I could, however, as well have done a median section and transplantation of round ligaments into the abdominal wall and removed the appendix, as I have done chiefly since then. In eighteen months afterward I had to do a much more serious operation for a much graver indication, all of which I could have avoided as well as not. In the other case I did the median section, examined the appendix carefully. It was normal in the best of my judgment, and I dropped it for purely sentimental reasons, and eight months later I had to do an emergency operation for violent appendicitis in this case also. While both patients recovered and are well, still I could and should have saved them their severer second sickness and much more dangerous second operation, by a harmless additional act at the time of their first operation. On the other hand, an appendix that has given rise to most serious trouble may become very innocent in appearance again. A farmer had appendicitis that was recognized by his physician, but treated medically. A large lumbar abscess formed that was opened by the doctor; but it would not stop discharging. With such a fistula leading toward the right kidney, he came to me. I opened up the tract and explored the abscess cavity, in which I found a fecal stone lying near the kidney. Then, to complete the work, I cut for the appendix, and was surprised to find it appearing perfectly healthy, aside from a few adhesions.

L. C. Fischer<sup>11</sup> had to do appendectomy after another abdominal operation in two cases likewise: and on inquiring of a number of operators, found that E. C. Davis, George H. Noble, Joseph Price, H. A. Kelly and J. B. Murphy had a similar experience. Howard Kelly also found six

7. Verhandlungen der Deutsch. Path. Gesellschaft, 1910, xiv, S. 167.

8. Kelly and Hurdon.

9. Am. Jour. Med. Sc., 1908, cxxxv, 822.

10. Jour. A. M. A., Aug. 6, 1910, p. 488.

11. Atlanta Journal-Record of Med., November, 1908.



such cases in the literature and does well to call attention to the fact that the normal appendix had better be removed when it can reach to the area of operation, because it is liable then to become adherent and dangerously constricted. Fowler<sup>12</sup> had two such cases of appendicitis after operations for pyosalpinx and says: "Ever since the occurrence of these two cases, I have made it a rule to perform typical excision of the appendix when the latter is intraperitoneally situated, in every case in which the abdomen is opened for any operative structures within the reach of this mischievous and useless organ."

Weiswange<sup>13</sup> did a laparotomy for pyosalpinx. The appendix was normal and could well have been removed. A few days later temperature and local signs developed as if an infection had occurred. An exudate was drained into the vagina; but a persistent discharge followed from the lower end of the abdominal incision, in spite of several exploratory efforts from various directions. Finally another laparotomy was required, when the end of the appendix was found drawn over to the original wound, as cause of the trouble. Weiswange holds that the appendix should be removed in all gynecologic laparotomies if possible. He says we cannot tell macroscopically certainly by feeling whether the appendix is normal; and we are often deceived. Kroenig and Pankow also take this stand, he says, although it may mean the removal of 40 per cent. of healthy appendices.

Savarioud<sup>14</sup> of Paris says: "My conclusions after due study of appendicitis are that it is much better to prevent an attack than to attempt a cure. Awaiting the day when it shall be the proper thing to remove the appendix from everyone, so as to do away with the disease altogether. I would advocate at present that when the appendix yields the slightest suspicion of being affected, its removal should be enforced." To those who are so sure of their ability to diagnose a healthy appendix the following cited by Novicki is a good lesson: A man of 38 years, suspected of having his first attack of appendicitis, was operated on for this in the Lemberg hospital. The appendix was found normal; and the abdomen was closed. The patient continued in a septic course and died. Autopsy showed the same normal (?) appendix and a retrocecal abscess that communicated by fistulæ with both the cecum and the same normal (?) appendix.

Concerning prophylactic removal of the appendix, McWilliams<sup>15</sup> in an excellent paper on all appendectomies performed in the Presbyterian Hospital of New York in the years 1906, 7, 8 and 9, amounting to 1,411, says that 212 of them were done incidentally during laparotomies made for other reasons, and several with other than abdominal operations. Of these 212 cases, one died of ulcerative colitis, in which a cecostomy was done in addition to removal of the appendix, which had nothing to do with the death. He says: "I have seen no list of such operations to prove that the removal of the appendix will prejudice recovery." In my own

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12. Kelly and Hurdon.

13. *Prager med. Wehnschr.*, Jan. 21, 1909.

14. *Interstate Med. Jour.*, May, 1900.

15. *New York State Jour. Med.*, March, 1910.



work I have removed the appendix in 299 cases of the last 600 abdominal sections that I have done for other causes than appendicitis or the removal of the appendix. While several of the former number have died, I am satisfied that this would have been the same if the appendices had not been removed. Le G. Gurry<sup>16</sup> had a mortality rate of only 0.3 per cent. in 545 chronic and early acute cases of appendectomy. It cannot be claimed that the danger from the incidental prophylactic removal of the normal or quiescent appendix can be any greater. In 200 of the 299 cases, the appendix showed clear signs of abnormality. These were in the order of their frequency: (a) club-shaped, being constricted at their origin or near the middle with a peripheral enlargement; (b) too long, measuring from 8 to 15 cm. (Nowicki states from extensive and exact observation that the average length in middle life is 7.4 cm.); (c) bound down and compressed in parts by bands of adhesions; (d) fecal stones or other foreign bodies like bristles, and in one instance bird-shot; (e) worms, twice.

I have repeatedly seen dyspepsia, and several times a strong suspicion of gall-bladder or duct disorder disappear after removal of a chronic appendix. Recently a man was sent to this city to consult an internist for supposed ulcer of the stomach. He also had a constant tenderness with sometimes a positive pain, at a point one inch inward from the left anterior superior iliac spine. No pain had been noticed in the region of the appendix, but there was positive tenderness of this member which seemed palpable to the finger. Palpation and percussion gave no positive signs of disorder in the upper part of the abdomen, aside from a little diffuse tenderness. I removed his appendix which was long, club-shaped and had bands of adhesions passing across it. The wound was extended upward and the gall-bladder, pylorus and duodenum were carefully inspected and the common duct palpated. All were negative aside from a little general hyperemia. His convalescence was smooth; and his dyspeptic symptoms and the suspicious left side pain have never appeared again. He is in very good general health.

Nearly ten years ago Howard A. Kelly put the question to a larger number of operators: whether they would remove the normal or quiescent appendix when it is practically possible during an abdominal operation done for other reasons. He received forty-four replies in the negative and twenty-six in the affirmative. To the question whether they would remove it if there were adhesions on it he received sixty-seven affirmative and seven negative answers. At that time the evils now known to be caused by the "chronic" appendix were not known. With a knowledge of these such a vote would now, no doubt, result in a large majority in the affirmative.

*Appendicostomy.*—At first thought this little tube would seem to be a very convenient means for establishing a small aperture into the cecum. But there are anatomic difficulties in the way: (1) its origin is an inch or more farther away from the abdominal wall than the presenting part of the cecum; (2) its most frequent direction, as studied by a number of

16. Jour. A. M. A., Jan. 1, 1910.

observers and on a large number of bodies, is transversely inward, rather away from the abdominal wall; (3) it is held in its position by a more or less firm mesentery which conveys its nutrient vessels; and it is often difficult to reverse its course therefor, by stretching or cutting at least parts of its mesentery without interfering too much with its blood supply.

The appendix has therefore frequently become gangrenous; and a cecostomy has resulted with not so firm a union between the cecal and abdominal walls, nor so good a chance for closing it when no longer needed, as would have been the case if a cecostomy had been done in the first instance, for instance by a technic resembling the gastrostomy of Kader. The following from C. A. L. Reed<sup>17</sup> is to the point: "I wish in conclusion to urge that cecostomy rather than appendicostomy should always be adopted as the operation of choice. As compared with the presenting part of the cecum, the ceco-appendiceal junction is an inch or more farther away from the abdominal wall. The meso-cecum is furthermore ordinarily so short and is always so inelastic that the appendix cannot be drawn and held forward without a degree of tension that is fatal to its integrity. The distensive pressure of any tube inserted and retained in the narrow lumen of the appendix is another influence that causes it always to perish during the first few days after the operation. Thus an appendicostomy always, sooner or later, resolves itself into a cecostomy. It is better, however, to do a cecostomy as a selective operation." W. B. Webb<sup>18</sup> did appendicostomy thirty-one times. He prefers it to cecostomy. However, in forty-three autopsies carefully observed with reference to this point, he found the appendix not available for appendicostomy in fourteen of them.

While, therefore, the uses for a temporary fistulous communication with the cavity of the cecum have increased greatly in kind and number, this expedient can be had without as well as with the appendix as a means. Its value for any such extremely rare and uncertain use is therefore infinitesimal, and cannot be considered by a physician or surgeon who is properly aware of the scientific facts and characteristics of this vestigial appendage and who conscientiously does his duty, to the best of his ability, to his patients.

2120 Cleveland Avenue.

#### DISCUSSION

Franklin H. Martin: Dr. Goldspohn did not make the point as definitely clear as I hoped he would that in all cases, or in the great majority of cases of operation upon the abdomen for incidental diseases he would remove the appendix if not diseased. For a long time, of course, we could excuse him for not doing that because he did so much work through the inguinal canal, and it is subject for congratulation that he has seen the light and has moved away from that kind of procedure.

In reading the abstract of Doctor Goldspohn's paper I concluded that he recommended the removal of the appendix in nearly all cases where it can be reached, and I have based my discussion on that idea of his position.

I think there can be no question about the soundness of the position taken by the essayist in his paper if the recommendations are to be carried out by experienced surgeons.

17. Jour. A. M. A., May 22, 1906.

18. The Postgraduate, August, 1910.

We all know and recognize the deplorable fact that there are men attempting to do abdominal surgery who are not competent to take out a normal appendix, when they go after it deliberately, to say nothing of the inadvisability of going after a normal or a diseased one through an incision made for another purpose.

This is not in criticism of young surgeons, who, naturally, cannot become experienced surgeons, until they have done much surgery, but, it is in criticism of the man who never can become a safe surgeon no matter how long he may attempt it. It is erroneous to assert that every well equipped medical man can become a surgeon if he tries a long time. A surgical temperament is a desideratum and a surgical temperament is as definite an entity as one can conceive of.

When the educational fight is all over, and medical schools are conducted exclusively for the education of medical men, a way will be found, I trust, that will eliminate medical men from the surgical ranks who can never become surgeons, and to impart experience to educated young surgeons without our patients having to suffer the consequences of that experience.

In this presence, therefore, I trust and assume my preliminary remarks are irrelevant, and the paper stands for sound doctrine, and what I have to say and recommend will be said as a recommendation to competent abdominal surgeons.

The most hopeful thing about this whole paper is the pre-supposition that an incision is going to be made somewhere that is large enough to allow an examination of all appendices, and this, again, presupposes that every palpably diseased appendix will be discovered. There is nothing more preposterous to me than to see a surgeon attempting to do work through an inch and a half incision in order to save traumatism and time, when if traumatism does then occur, it will be to buried tissues handled blindly through an inadequate incision, and where time is needlessly consumed in attempting to do work in the dark.

The next in degree of preposterousness, is to see a man work through a small incision, and through his inability to explore the balance of the abdomen, leave an undiscovered appendicitis or some other pathology that would have been discoverable and easily repaired through a proper incision.

A better way to save time, than by a short incision, is to reserve the anesthetic entirely for the operation. The patient should be placed upon the table in the operating room and the fifteen minutes of final preparation done before the anesthetic is begun. All the time the patient is asleep should be utilized in the operation. This will give that much more time needed for exploration, and if necessary, the removal of the appendix, or the drainage of the gall-bladder.

If we are going to recommend the removal of all appendices when the abdomen is open, we must pre-suppose an appendectomy technic that presents the minimum risk. This is no place for experimentation or fancy work.

Insure perfect hemostasis by ligating both appendix and meso-appendix with fine strong catgut. Insure perfect burying of the stump with a purse string of linen, or silk, and whip in all uncovered surfaces with the same ligature.

Before burying the severed stump of the appendix, render sterile its septic point by the application of a reliable and safe antiseptic. This point may be superfluous in most cases, but sepsis will only occur where there is septic material.

Nor must we feel that it is a criticism of a surgeon's diagnostic ability if he takes time, to be sure, when the abdomen is open to ascertain that difficulties do or do not exist that he did not suspect. In fact an abdominal surgeon has no right not to suspect. The greatest surgeons in the world, both in technic and in diagnostic opportunities, never allow themselves to be deceived by a diagnostic guess. They make sure, by large incisions, and through exploration. In this way they have found things the rest of us have never dreamed of—until afterwards.

It is interesting to remember that the relative proportion of appendicitis in men and women in 100 cases is forty women and sixty men.

Men are more susceptible because subjected to harder work, and inclined to eat more abundantly, and of coarser food. Their pelves are narrower; the cecum



occupies a more central position, over-riding the large constantly acting psoas muscle.

In women the reverse is true, in regard to excessive exercise, and overeating, and the cecum with the appendix occupies a roomy cavity, and further removed from the center of the body so that it is not subject to the same degree, to the traumatism of the psoas muscle.

A large percentage of appendicitis in women occur:

1. As a result of infection secondary to the pelvis (a comparatively small percentage).
2. In the so-called neurotic type with movable kidneys.
3. In women with broad shoulders and male pelves, who are athletically inclined.

The practice that I recommend and adopt (with exceptions) is as follows:

I explore, in chronic cases, all vulnerable points of the abdomen when it is open. This is accomplished through a three-inch incision:

1. Through the right rectus muscle one-half to an inch to the right of the median line between the umbilicus and the pubis, when the diagnosis indicates pelvic trouble.
2. A three-inch right rectus incision over the seat of the gall-bladder or the stomach when gall-bladder or stomach difficulty is diagnosed.
3. A right rectus incision three inches in length near the outer border of the right rectus at McBurney's point for suspected appendicitis.

From any of these incisions all the vulnerable points of the abdomen can be rapidly explored by the insertion of the hand, and the incision extended if necessary.

Through the upper or lower incisions I consider it advisable to remove the appendix in the majority of males under 60 years of age whether diseased or otherwise, and to remove the appendix whether diseased or not in all females under the same age when the disease is suspected (and I have often done it anyway) or where the individual is of the athletic or of the movable kidney type.

I wish to emphasize, what the essayist has emphasized, and to forestall just criticism of the opponents of this line of work by stating that these rules should not be applied if the immediate condition presenting, after making the incision, reveals a pathology the handling of which, successfully, will require conservation of all possible time, and the slightest excess of traumatism; or if the general or any special condition of the patient contra-indicates the slight delay necessary for additional exploration; or where it is necessary to explore from or through an infected field.

In these cases, I should consider it as criminal to explore, as it is criminal not to explore when the abdomen is open, where these definite contra-indications do not exist.

Channing W. Barrett: I wish to express my pleasure at hearing this paper of Dr. Goldspohn's. I wished to see whether there was very much difference in Dr. Goldspohn's handling of these cases and mine, and I see there is not, because he has shown a conservatism which I did not expect from the title of the paper.

I would take issue with the title of the paper, and with the abstract upon this point: not perhaps with Dr. Goldspohn personally as he handles his cases.

A very large part of his paper was taken up in showing what a criminal the appendix is. Upon that I do not believe we would have a dissenting voice. The appendix is, without doubt, one of the great criminals of the abdomen. The sigmoid is another point of the intestinal tract combining very largely in abdominal disease. In fact, I think we find the sigmoid more frequently involved with pelvic disease than the appendix and we might well spend time telling what a criminal it is.

One might as well say, what shall we do with men in general, and then what shall we do with him when he becomes a criminal, or what shall we do with a murderer when we have a jury impaneled. Now the question is not at all what we shall do with man, from a criminal standpoint, or what shall we do with the

murderer when we have a jury impaneled, but what shall we do with the murderer? The question is not what shall we do with the appendix when we are in the abdomen, but what shall we do with the appendix. Surgeons have been busy for years telling what they will do with diseased appendices; now we have established before us the fact that the appendix is so great a criminal that it must be dealt with even before it becomes diseased. It is not a question at all of what we shall do with the appendix when it is diseased, or when we are in the abdomen and it is only a matter of a few minutes' work to remove it, but *what shall we do with the appendix?* If it is true that because the appendix is apt to become so diseased and we cannot tell when looking at it that it is diseased, how can we tell how the appendix appears in the husband of the woman upon whom we are operating. If she should have a healthy appendix removed (which we know is healthy because we can see it right before us) should not he have his removed which we cannot see and which, for all we can tell, is diseased? It is easy enough to get at the appendix, it is just a little way in and it can be done perfectly safely, while if we add this operation to the woman some one or two or more women are going to die because of the extra shock. We can easier tell whether a given appendix is diseased or not than we can tell whether a woman has received the limit of her operable possibilities. You may not be able to tell until she is put back to bed and probably died.

So I repeat, the question is: what shall we do with the appendix on its own account, not because we are doing something else and can add this.

Fenton B. Turck: I want to call attention once more to a point of etiology made before. Surgeons do not look to etiology or to the question of the disease behind the mechanical conditions presented. Fever in the appendix may be due to infection, especially to the increased virulency of the bacillus coli. Mahnert and Patterson's observations show that ulcer of the stomach follows or is associated with appendicitis. Since the colon is evidently as great a "sinner" as the appendix, might we not with just as much reason assume that with every abdominal incision we should remove the colon? It is a simple matter of tests to determine the virulence of the bacillus coli, and even the degree of virulence. Intraperitoneal injections of bacillus coli cultures will kill a rat in so many hours, which represents the pathology in the case. Having determined the fact of increased virulency, our attention must be directed against it. That is as much a surgical proceeding as the removal of some three hundred appendices in which there was no involvement. When we have at our command methods by which we can determine, and absolutely prove, the increased virulency of the colon bacillus, which causes most of the conditions for which we operate in the abdomen, it is time we used prophylaxis against the cause rather than remove normal organs that might or might not be involved.

A. Goldspohn (closing discussion): In reply to Dr. Martin I would say that it would not be rational to advocate the removal of appendices in every operation of the abdomen. This removal is warranted only provided it can be done without added danger. That is not always possible because many patients are so dilapidated, or the work we have to do is so serious that it taxes their endurance to the uttermost.

Also, it is not necessary to remove the appendix from old people. It is an organ which grows with childhood and maturity and then grows back again in senility. Very, very few cases of appendicitis will be found in people over 50. Therefore when you operate on any cases for carcinoma it is not often indicated to remove the appendix because you are dealing with an elderly subject and with bad cases, nothing of the kind is called for.

Then there are other instances where the appendix is walled in, you would have to do so much foolish digging and so much injury to the patient to find it, which certainly you would scarcely do unless you had very, very good reason for its removal; therefore, I find only about half of my cases which I considered proper subjects.

In reply to Dr. Barrett: I cannot see so very much sense in his remarks. He might as well say that where it is good to take two doses of a medicine it would be better to take twenty or two hundred.

Replying to Dr. Turck I would say that we do not advocate removal of the colon because it is an organ having a distinct function. The appendix is not an organ and has no function. The colon is accessible to Dr. Turck. The appendix is not.

So far as inversion of the appendix is concerned: I did that in about the first fifty cases, but now I rather prefer to remove it entirely.

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## ARE REFORMS NECESSARY IN THE A. M. A. AND ITS CONSTITUENT BODIES?

WITH SUGGESTIONS FOR REFORM IN THE POLITICS AND MANAGEMENT  
OF THE ASSOCIATION \*

G. FRANK LYDSTON, M.D.  
CHICAGO

That physicians in general are poorly versed in matters of law, goes without the saying. That the organization and operations of our medical societies are often open to impeachment on legal grounds is merely a corollary of indifference to and ignorance of legal forms on the part of the medical profession at large.

The saving grace in the case of medical organizations is the fact that they are usually voluntary associations for purposes of a purely social and scientific character, and the occasion is extremely rare when non-conformity to technical legal requirements is in the slightest degree important. When, however, a medical organization becomes a commercial enterprise and acquires large business interests and property, the question of conformity to law is of vital importance. It is especially important if non-conformity to law involves an infringement of the rights of the membership at large and serves to antagonize the principles of democracy or to place the management and control of the organization in the hands of a self-limited few.

In the days when the American Medical Association was merely a voluntary organization devoted to science and professional fraternalism and good fellowship, it made very little difference whether or not legal technicalities were observed in its organization and management. Since, however, the Association entered the commercial arena, the situation has radically changed.

I doubt not that, had some of the gentlemen who so enthusiastically embraced the ambitious scheme of reorganization some ten years ago been able to foresee the time when the Association would have a large trust fund, a business of over half a million dollars a year—a business that is still growing and which, when the Association has finally monopolized the entire field of medical journalism, medical advertising and medical publishing, will be awesome to contemplate—they doubtless would have proceeded with caution and due observance of all legal methods and

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\* Read at a meeting of the Chicago Medical Society, Feb. 15, 1911.



formalities which would protect the Association and its members from future complications. However, not only did they not proceed with due regard for legal form, but even the adoption of the ambitious and portentous scheme of reorganization of the A. M. A. was itself accomplished in a most irregular manner and with utter disregard of the organic law of the Association. What occurred at that time was an example of what always occurs when the indifference of the mass makes it as clay in the hands of the ambitious few. When ambition comes in at the political door, principle and the rights of the rank and file fly out of the window.

And not all were blind. As one distinguished member of the House of Delegates expressed it, "We have put a yoke about our necks, and a ball and chain on our legs from which we never will be freed." As to the yoke and leg shackles, they are self-evident; as to the hopelessness of the situation, I am not so sure.

I present herewith a statement bearing on this point from a gentleman who was present during the proceedings by which at St. Paul in 1901 the reorganization was effected:

"Under the constitution existing in 1901, the constitution then gavelled through should have been referred to the next meeting for action. The minority report was suppressed by the physician who was given it to read before the Association. Although the ayes and noes were called for, the president ignored the call and ignored the protesters against the rail-roading, refusing to recognize any member of the minority in the executive session. I voted against the clauses, individually and collectively, pointing out *ex post facto* factors and the illegality of that, and of the summary action. The minority report which was suppressed by the man intrusted with it, embodied these ideas.

(Signed)

"JAS. G. KIERNAN."

It will thus be seen that the officers of the A. M. A., from the very beginning of reorganization, ignored legal formalities and the rights of the membership at large.

Ignorance, or perhaps an excusable lack of appreciation of the ordinary principles of equity, might condone the irregularities which characterized the reorganization of the A. M. A. It would, however, be difficult to condone the manner in which the governing powers of the Association have since resented all criticism of its defects and irregularities, and smothered or condemned all suggestion for reform.

The legality of the operations of an organization revolves largely around its political methods. When these are illegal, or even unfair and unjust, the entire fabric of the organization is on unstable ground. I doubt if any organization in this country is on such precarious ground as is the A. M. A. Under present conditions the Association is absolutely undemocratic, and its operations open to most radical impeachment on the grounds of unfairness and illegality. The conditions surrounding the initial vote alone are sufficient to condemn the entire political system of the organization.

The only opportunity—an opportunity that is largely theoretic—granted the members of the A. M. A. for the expression of membership

opinion and rights is afforded by the constituent district societies. The members of these bodies are the initial voting units of the A. M. A. There are nearly 80,000 of these voting units, of which something less than 35,000 are members of the A. M. A. *In brief, the voting majority which elects the state delegates, who in turn elect the national delegates who transact the business and constitute—by the power they vest in the Board of Trustees—the governing body of the Association, is composed of non-members.* That this is not understood by the membership at large is not surprising in view of the fact that one of the trustees recently informed me that he did not know that such a condition existed! I was compelled to give him a diagram in order to enable him to comprehend the situation. Once he comprehended it, however, he was gracious enough to admit that the system was wrong. His graciousness, however, would be more in evidence and more to the point if, the local trustee and the editor permitting, he would acknowledge the truth in the columns of the *Journal*.

With the control of the Association in the hands of the men elected by a voting majority of non-members—who contribute not at all to the A. M. A. yet have the same elective franchise as that for which the regular members are mulcted in dues—no argument should be necessary to prove that the organization is at least technically illegal and indubitably unfair from top to bottom. The political stream cannot rise higher than its source. But there is something apparently still more serious:

*The A. M. A. was incorporated under the laws of the State of Illinois. It rightfully enjoys no privileges other than those accorded all other corporate bodies of the state.*

However their actions may belie their words, the ruling powers of the Association do not claim that the charter of the A. M. A. confers special rights and privileges. In answer to an inquiry which I addressed to the two gentlemen who for many years have held the destinies of the A. M. A. in the hollow of their hands, I received the following replies, which show a harmony of opinion, knowledge and literary expression that is truly remarkable:

CHICAGO, 4-30-10.

DR. G. F. LYDSTON, Chicago, Ill.

DEAR SIR: Replying to your letter of April 28: You ask "what special privileges are enjoyed by the A. M. A. under the Corporation Laws of the State of Illinois." I do not know that the American Medical Association enjoys any privileges other than those enjoyed by other similar organizations.

Very truly yours,

(Signed) GEORGE H. SIMMONS.

CHICAGO, May 25, 1910.

DR. G. F. LYDSTON, 100 State Street, Chicago, Ill.

MY DEAR DOCTOR: Your letter to the Secretary of the American Medical Association asking what special privileges are enjoyed by the A. M. A. under the corporation laws of the state of Illinois was referred to me as the chairman of the Board of Trustees and in the absence of the Secretary from the city. I do not know that the A. M. A. enjoys any "special privileges" over any other corporation organized under the same law and with the same kind of charter.

Yours Very Truly,

(Signed) M. L. HARRIS.

What are we to infer from the statements of Drs. Harris and Simons? Are the secretary and the chairman of the Board of Trustees of the A. M. A. ignorant of the law in matters in which we are paying "eminent counsel" to advise them, or are they ignorant of the construction of our charter? If they know what appears to be the law, and are familiar with the charter—and the letters of both claim familiarity with it—they stand convicted of wilfully breaking the law and of making the entire membership of the Association *particeps criminis* in their infraction of the law and therefore *cannot evade the responsibility of whatever the outcome of court proceedings may be*. This would seem to be the inexorable logic of the situation.

I will say but little regarding the adoption of its charter at an "adjourned meeting" of the A. M. A. (*sic*) held in the Columbus Library, 103 State Street, Chicago, June 16, 1902, subsequent to the Saratoga meeting June 13, 1902, at which several thousand members were present, other than to state that every man present was aware of the architectural limitations of the Columbus Library and well knew that the proceeding was irregular and illegal. As one gentleman who was one of the alleged "quorum" (!) of the A. M. A. remarked to me the other day: "We knew the whole thing would not stand the test of legality, but we were all good fellows together and everything went."

But the irregularities of 1902 possibly may be of no moment now; they may serve merely to illustrate the slipshod and irregular manner in which certain steps of the present organization were accomplished. And yet, one never knows what the courts will decide in a matter of this kind.

The important point is this, viz.: the corporation laws of Illinois demand that the corporate business of all corporations chartered by the state shall be transacted, not only within the borders of the state, *but at the location of the central office of the given corporation as designated in its charter*. The charter of the A. M. A.—a copy of which lies before me—plainly states that the central office of the Association is in Chicago, Cook County, Illinois, *notwithstanding which its elections are held here, there, and everywhere*. As there has been, since the reorganization, only one election held in Chicago, that held three years ago, there can have been but one legal election since the reorganization. Even this is dubious, because of the illegal construction of the official body at that time.

In answer to my statement that the elections of the A. M. A. were illegal, the ILLINOIS MEDICAL JOURNAL said editorially, some time since: "*Eminent legal counsel have passed upon this point, and their opinion is better than Dr. Lydston's.*" The editorial neglected to state who the "eminent counsel" were, or what their opinion really was. I inferred, however, that the editor intended to convey the impression that the "eminent counsel" had opined that the elections were "legal." One would think that the editor might have taken the membership into his confidence and stated the facts.

I will not dwell at length on the fallibility—to use a mild word—of the opinions and advice of corporation lawyers in general, when retained by the particular corporation whose acts legal advice and opinion are pur-



chased to sustain. I will merely state that, as is well known, they are prone to give the sort of opinion and advice which most nearly suits the policies of their clients. They are willing to skate on pretty thin ice if they think there is a long chance of not breaking through.

I suspect that the "eminent counsel" in this instance were no exception to the rule as to advice in the matter of evading legal issues and cutting legal corners. I fancy that the opinion was, that while the elections of the A. M. A. were illegal, the Association was safe because all the members were "good fellows" and nobody was likely to protest. The "eminent counsel" probably further advised the officers of the Association to "assume a virtue though they had it not," by having the trustees meet in Chicago and "ratify" the proceedings of such meetings of the House of Delegates as should happen to be held outside the state of Illinois. The question naturally arises: *If the "eminent counsel" and the officers of the A. M. A. did not know that the legality of meetings of the A. M. A. outside the state of its incorporation was open to question, why the farcical "ratification" meeting of the trustees?* It might also be pertinent to inquire why, if no legal complications were feared, an application was made to congress for a national charter for the A. M. A.

Whatever the psychology of the situation may have been, the following presents existing conditions in a nutshell:

*The Board of Trustees, an illegally created body, meets annually in Chicago for the purpose of "ratifying" and making "legal" the transactions of the illegally constituted body which illegally created it. A futile attempt this, to make the political stream rise higher than its source, which puts to the blush squaring the circle, the fourth dimension, or any other of the seven follies of science. One might reasonably wonder what the advice of the "eminent counsel" would have been, had they foreseen the present immense business of the A. M. A. or, above all, had they foreseen the appearance of insurgents in the land.*

As to "ratification" making legal the acts done at meetings of corporations held outside the state of organization, be it noted that such ratification can only be made by a two-thirds vote of the identical body holding the particular meeting the acts of which are sought to be ratified—(*Vide* Sec. 20, Chap. 32, Illinois Statutes)—and plainly, the ratification of the acts of A, the House of Delegates, by the act of B, the officers elected by A, is abhorrent to the law. "*Nemo potest esse simul actor et iudex*" (*Vide* Broom's legal maxims). In brief, while a corporate body may by a two-thirds majority, ratify and make valid its own acts, where such are illegal in form, no body of its creation can legally ratify the acts of the original body.

*The trustees and the "quorum" (sic) which ratified the acts of the Saratoga meeting and adopted the present charter will please take notice.*

Having ventured to express an opinion regarding the legality of the elections of the A. M. A., and having filed a formal protest against further violations of the law, as I did prior to the last meeting at St. Louis; and further, having been refused the consideration to which my membership in the organization entitled me, I naturally was curious to have the

point settled in the only forum that appeared to be open to members of the A. M. A., viz., the courts. I shall be well satisfied with the decision of the court, whatever the ruling may be. Whether or not it supports my contention is not in point. *What I want to know, and as a member have a right to know, and what every member ought to know, is the precise legal status of the A. M. A. and its individual members.* The Association has rapidly become wealthy, and is growing wealthier still—for our ambition knows no bounds—and if there is a shadow of suspicion of illegality which may one day cast a cloud on the title of our vast possessions and enormous business interests, the sooner we know where we stand the better. *If we have builded a house of cards, it would better fall now, before any more stories are added.* Better another and sound reorganization, than one which will not stand the test of legality. That some people's pride might be hurt is true; that some people might fall with the house on the sands is also true, but the pride and ambition of men are as nothing in the crucible in which principles are tried. The selfish interests of the ambitious few should weigh little in the balance with democracy and the weal of the membership at large. Men may come and men may go, but let us hope that the A. M. A., like Tennyson's brook, will go on forever.

As to resorting to the courts, the issue was forced. All criticism, all protests, all suggestions had been resented or smothered. We "dissenters" were willing to meet A. M. A. officialdom half way, but the ruling powers held that no good could come out of Nazareth, and there you are. There was no plane on which the gentlemen who were so sure of their own infallibility would consent to meet the "insurgents." There was no medium through which to present and discuss the issues involved. At no time or place had it been possible to secure an audience with the powers that be or a forum in which to openly debate the issues involved. Was this because the A. M. A. officialdom believed itself right, and the dissenters wrong at all points? Publicly, yes, but in secret caucuses, no. The gentlemen know they are wrong in the main, but refuse to admit the validity of a single criticism.

If I am wrong as to this assumption, if the gentlemen of the opposition are sincere in their belief that there is nothing rotten in Denmark, I would suggest that they debate the issue with the insurgents in the columns of the *Journal A. M. A.* The editor can be relied on to eliminate all acrimony and those "personalities" which have so keenly wounded the sensibilities of certain gentlemen who have yet to explain why the truth should not be spoken in medical politics as well as in the everyday variety. It would seem a difficult task to dress truth in a garb acceptable to some individuals, but if properly advised and instructed, the editor possibly might refrain from using the blue pencil too freely on the matter personally unacceptable to him.

Of one thing the members of the A. M. A. may be assured, viz., protest against present conditions will never cease until an open and free discussion of the various issues followed by the necessary reforms has occurred. *Smothering of the grumbles of discontent, partisanly side-tracking issues, stand-pattism and "double crossing" will not avail.* As

to the legal points involved the members may console themselves that, when I have done, the controversy will be settled once and for all. If needs must, the matter will be carried to the court of final jurisdiction. Partisanly influenced public officers who refuse to do their obvious duty will probably not avail the opposition in the attempt to prevent a hearing in a matter in which *the gentlemen of the opposition should themselves be first to demand a decision*. Some people appear to be poor psychologists when they estimate the metal and endurance of an opponent.

As to the status of the state's attorney in refusing to serve *quo warranto* writs on the trustees of the A. M. A., the following is pertinent:

In the case of *People ex rel. Edwin O. Rastee, vs. John J. Healy*, states attorney, it appears that Horace L. Brand was claiming to be treasurer of the Illinois Publishing Company, a private corporation under the laws of Illinois. A petition of *quo warranto* was presented to said Healy, state's attorney, setting forth the facts, to-wit: that Horace L. Brand had never been legally elected secretary of said corporation. The state's attorney and the attorney general both refused to sign said petition of information in the nature of a *quo warranto*, to inquire into the title of said Brand, and thereupon Edwin O. Raster filed a petition for mandamus to compel said Healy to act and to sign said *quo warranto*, and the supreme court held that the relator was entitled to his remedy and issued a mandamus directing said state's attorney to sign said information in the nature of a writ of *quo warranto*.

The power must be considerable which could so influence a public official as to impel him to refuse to fulfil the obvious duties of his office. I submit that it is not only considerable, but dangerous to professional liberty and subversive of the rights of individual members of the A. M. A. and its constituent bodies.

Certain gentlemen in A. M. A. officialism have presumed to withhold from the consideration of the membership all criticism of, and protests against what I believe to be radical faults in the organization and administration of A. M. A. affairs. They have both discreetly and indiscreetly assured the members that my position was unworthy of attention. Be it again remarked that, to get the matter properly before the Association, I filed a formal protest against the holding of an election in St. Louis, on the ground of its illegality. *This was not presented to the House of Delegates nor published in the Journal. Should the members of the House of Delegates take exception to my resort to the courts, they will please note the foregoing and place the responsibility where it properly belongs.* The House might also inquire why the resolutions passed by the Louisiana State Society recommending to the A. M. A. the referendum, published in various journals and formally transmitted to the secretary of the A. M. A. was *neither published in the Journal of the A. M. A. nor presented to the House of Delegates. Who suppressed it, by what authority and for what purpose?*

That the protest, and the legal proceedings I afterward began were not based on chimerical or captious notions, I will now proceed to show by all the authorities I have been able to gather. I submit merely those



facts which impelled me to lay the matter before my attorneys and which I submitted to them, and some which my counsel have since added. As to what further may be gathered by my attorneys is a matter of future development. One might aptly inquire on what the "eminent counsel" to whom the Association pays our good money, based its opposition and advice to the officers of the A. M. A. on the point at issue and also on what the claim of legal "eminence" is founded. Possibly "legal eminence" is but an euphemism for legal cleverness.

1. As to the general issue, the following is brief and to the point:

In *Reichwald v. Commercial Hotel Co.*, 106 Ill., 439-450, the Supreme Court held that: "With reference to the power of a corporation to perform corporate acts outside of the state of its creation, where the laws of its corporate existence have no force, the general rule is that such power does not exist."

This precedent has not yet been overruled, so far as I know, by any court. Be it remarked that, in regard to this point, which I believe is one of purely constitutional law, *no distinction is made between corporations for profit and those not for profit*. If the fact that the A. M. A. was organized "not for profit" is made an alleged defense, let us hope that our half million dollar growing business, and prospective publishing and advertising monopoly, will appeal merely to the court's sense of humor. This may save our faces and protect us from unpleasant complications, should the attorney general of the state obtrusively note the point. Our charter plainly states: "*The object is to promote the science and art of medicine.*" There be those who feel that we are on rather ticklish ground in view of our vast business interests and attempts to corner the printing and medical publication market.

In several other cases the ruling has been equally explicit:

"It has been recognized as the general rule by this Court (Supreme Court of Illinois, Springfield) that the power of a corporation to perform corporate acts outside the state of its creation and where a corporate existence has no force, does not exist."

*Harding v. American Glucose Co.*, 188 Ill., 555-641-615.

*Bastian v. Modern Woodmen*, 166 Ill., 595.

The court further said that:

"In some cases it has been held that action by the corporation outside the State of its creation is null and void." In regard to this point the law is that "such proceedings are voidable at the election of dissenting members of the corporation." (Morawetz on Private Corp., Sec. 488; Cook on Stock and Stockholders, Sec. 589.) (It will be noted that there are dissenting members of the A. M. A. corporation) and that, "of course, members or stockholders may be estopped by their consent to participation in or ratification of the act done." (*Hadley v. Stutz*, 139 U. S., 417.)

*A formal protest against the last election in St. Louis was filed by me.*

Now as to the possible plea that the A. M. A. is a benevolent organization—this goes even further than the "not for profit" plea of the charter.

In *Bastian v. Modern Woodmen* (166 Ill., 600-601) and in *Place v. People*, (192 Ill., 160) the court held that: "There was no authority, at the time the head camp met at Omaha, to perform in the State of Nebraska corporate acts, strictly so-called, against the will of members of the corporation, and such an act as changing the articles of the association which formed the basis of the corporation, is unquestionably of that character."

Be it remarked that the election of officers for the transaction of business and the administration of a corporation is the most important of all corporate acts. The question of the legality of their subsequent acts is a matter of relative importance. The official body is the fountain head of all corporate acts and, if it be illegally created, everything that follows can be construed and usually proven to be illegal.

The court further said:

"The incorporators were required to state in their application the place where the principal business office should be located, and a copy of this application was to be made a part of the certificate of organization which was to be recorded in the office of the Recorder of Deeds of the county in which such office was located. The location was an essential and material part of the articles."

The membership will again please note that the charter of the A. M. A. reads: "*The location is in the City of Chicago, in the County of Cook, State of Illinois.*"

In a certain Illinois decision it was, I believe, ruled that the trustees of a certain sanitary district could not legally transact business outside of their own district, even though all the districts were under the same general order of things and incorporated for the same specific objects. Be it remarked that the sanitary district bodies can hardly be alleged to be corporations for profit.

It has been repeatedly decided by the Supreme Court of Illinois that city councils, drainage commissioners, and other such chartered legislative bodies, cannot exercise their prerogatives outside of the territorial limits of the district within which their powers are confined. *People v. Camp*, 143 Ill., 154; *People v. Hepler*, 140 Ill., 199. In many other instances the courts of this state have repeatedly decided this question in a similar way.

Should the outcome of the legal proceedings which I have instituted be embarrassing to the officers of the A. M. A., they will have only themselves to blame. I have repeatedly demanded a hearing on the question at issue—and on many other questions involved in the reform movement in the A. M. A. The answer has been only impugnement of my motives and question of my sincerity and intelligence. The attitude of those in authority and their satellites has been, in effect, complete abrogation of the right of a member of the A. M. A. to in any way question the infallibility of the present official régime, or to openly protest against what many of the membership conscientiously believe to be wrong in principle and eventually disastrous in operation.

If, the defendants having admitted the facts of my allegation and demurred to my application for a mandamus on the ground that I have no standing at law in the matter set forth in the bill, the demurrer should be sustained by the court, the Association should, and probably eventually will, disintegrate from sheer lack of cohesiveness of its ultimate elements, the membership. The members, as it appears, have no rights within the Association, and if the court decides that they have no rights which the courts are bound to respect, they would better cease supporting such an anomaly and anachronism as the A. M. A. which, under such a ruling,

obviously would be an exception to all laws to which other corporations are amenable. Without recognition, either within or without the organization as essential factors of the A. M. A., the members should hardly be expected to possess *esprit de corps* or even to recognize any logical reason for the existence of what can be called only by courtesy an organization, and which under such conditions would be about as logical and effective as would have been a labor union among the slaves of a plantation in antebellum days. *On the conditions surrounding the ultimate elements of an organization, the very life of the organization in the last analysis depends.* History, in its chronicle of the rise and fall of empires, teaches us this, if it teaches anything.

If the membership at large is shown to have no legal rights, there exists a rather suggestive and anomalous condition of affairs, in view of the enormous and increasing business interests of the A. M. A., especially if it should ever become necessary to wind up Association affairs. A large trust fund and a huge business in the hands of a select few, with no legal claim on it on the part of the members, should be a pleasing thing for the latter to contemplate.

Now as to remedies for existing illegalities and irregularities in the A. M. A. and its constituent bodies:

1. Provision by which all members of constituent bodies shall automatically become members of the A. M. A.

2. The popular ballot in the A. M. A. and its constituent bodies, with the up-to-date political "check" system of the initiative, referendum and recall, and nominations by petitions. The balloting can be done by mail, as in the Chicago Medical Society.

Reform as to legality of elections could be accomplished by having the Association, or the House of Delegates, at least, meet annually in Chicago, but I doubt if the membership at large would stand for this. Should the House of Delegates hold a ratification meeting in Chicago, this would require an attendance of two-thirds of its members.

3. A—Provision for the election by direct membership ballot, of delegates to the state and national associations, this method to comprise a just and fair numerical representation.

B—Election of councilors of state societies by direct ballot of each councilor district.

4. Abolition of the voting power of councilors in our state societies, following the precedent set by the A. M. A. in the case of trustees.

5. A card transfer system for members of the A. M. A. who chance to change locations, thus doing away with the present unjust, illogical and absurd system which makes it obligatory on a member to join the district "branch" (*sic*) of the A. M. A. in his new location within one year from the date of his removal, but which is not mandatory on the said district branch. By this system, a man may be dropped from the A. M. A. although his dues are paid and he is willing to comply with the rules of the Association in the matter of joining the district society in his new location.



6. Amendment of the By-Laws so as to prevent multiple office holding. The three most important offices in the Association are at present held by one individual. This places too much power in and imposes too much responsibility on one individual.

7. Provision for an open forum in our state journals and the *Journal A. M. A.* for courteous discussion of the methods and policies of the A. M. A. and its constituent bodies.

8. Provisions for elections in the A. M. A. that shall be conformable to law, granting that the courts support my contention on this point.

The foregoing suggestions constitute the salient points of the reform resolutions adopted by the Illinois State Society at its Danville meeting. As is well known, a strenuous effort was made to prevent consideration of these resolutions. It requires little perspicacity to comprehend the reasons which underlay the opposition to even the consideration of suggestions for political reform. It is a questionable cause that demands for its defense partisan rulings, a chloroforming committee, the omission of an entire day from the time allotted to the proceedings of the House of Delegates, and a partisan attempt at adjournment.

#### DISCUSSION

H. F. Lewis: There is only time for a few remarks upon this subject, although there is much that might well be said. There is one point to which I wish to call particular attention. That is the set of reforms that were designated in the paper in regard to the open forum and the proper means of criticising things in the national and state societies, especially in the American Medical Association and the Illinois State Medical Society.

What one of us, unless he is properly labeled, can criticise anything in *The Journal A. M. A.*? Have any of you tried? I have, and others whom I know of have and they have not been able to do so. What one of you can get any sign of a criticism into the ILLINOIS MEDICAL JOURNAL? I, and others, have tried but have not been able to do so. Yet both of these journals are used to print the material which these properly-labeled persons want to see published! That is all correct, no doubt, and these people who are properly labeled are no doubt "the people," but some of the rest of us are a little bit vain and think that perhaps we have a little wisdom, just a few crumbs that have dropped from the tables of these "Great Folk," which we would like to let get out into circulation. We think that we should at least be given a little corner somewhere that we could see a few of our own things published.

Perhaps I will be pardoned if I refer to a personal experience in this matter. Something has been said of the proceedings in Danville. It was there that the resolutions which embodied the reforms which were mentioned in Dr. Lydston's paper were passed, after strenuous opposition on the part of officials of the State Society. The secretary of the Illinois State Society, Dr. Weis, wrote to the editor of *The Journal A. M. A.* after the Danville meeting stating that these resolutions for which we were contending were not properly passed, that a quorum was not present and that the meeting was adjourned. This was published in *The Journal A. M. A.* and sent broadcast to every subscriber to *The Journal A. M. A.*—some 50,000 of them.

Believing that Dr. Weis was incorrectly informed in that statement of fact, I wrote a short, courteous letter to the editor of *The Journal A. M. A.*, expressing the hope that he would publish my letter.

It is immaterial whether I was right or not (I believed, however, that I was, and there were many others who believed I was). I had a right to be heard. It seems that this letter of mine was very important, although I did not realize

how important in the first place. I received one letter from the assistant secretary, saying that the secretary was absent and that this matter would have to be considered upon his return. Dr. Weis's letter was received during this same absence, and yet it did not have to await the secretary's return. Finally I got a letter from the great man himself in which he stated (very courteously, I assure you) that inasmuch as Dr. Weis was the secretary of the State Society, his letter had been published, but as I was not, mine could not be! I was not properly labeled, and I felt squelched, I assure you! I was not even a delegate to the meeting, I merely went to the society meeting as a private individual and therefore I had no right to be heard.

Dr. James E. Stubbs, second vice-president of the Illinois State Medical Society, then wrote a letter calling attention to this matter. This was also refused publication—not on the ground that he was unofficial, for you see he was, but because the matter not being of general interest to the profession at large, we could hardly expect that it would be published in *The Journal A. M. A.* And the great editor further referred us, in our controversy, to the ILLINOIS MEDICAL JOURNAL as the one most properly concerned. You see Dr. Weis's letter was of general interest to the profession at large, while that of Dr. Stubbs, upon the same subject, was not!

These letters were not even published in the ILLINOIS MEDICAL JOURNAL. One letter, however, signed by twenty-six members, twenty of them delegates to the Danville meeting, all of whom stated that they were present at the meeting when these resolutions were under discussion (twenty is a quorum, you know!) was finally published.

Now there were several letters published by Dr. Collins, first vice-president, who presided at this meeting at the time of the attempted adjournment, stating that he presided and that an adjournment was taken.

Then came the question of the stenographer's report of the meeting. There was a question of veracity and a question of fact. Twenty-six had signed a certain statement. One, Dr. Collins, had sent in a signed statement to the contrary. All of these men were supposedly equally truthful and honorable, and all were equally entitled to the attention of the editor of the *Journal A. M. A.* This controversy could have been settled by reference to the stenographer's notes (the stenographer was a gentleman living in Danville). Of course he could not be asked to give up his notes without an order from the secretary. Here, again, I wrote a letter which was so important that it had to be referred to a higher power—the Council of the Illinois State Medical Society, if you please, from whom I finally received a letter that the said Lewis could not be allowed to receive copies of this stenographer's notes, that an abstract of the reports of the meeting had been published in the ILLINOIS MEDICAL JOURNAL, but with all of the part referring to this matter and the attempted adjournment omitted.

That is my experience and that of twenty-five others. As to the open forum: Where is it? Where can we have any means of having our criticism or our ideas published? There is no place that I know of.

J. F. Hultgen: I think I can speak for a good many general practitioners here in town who attend to their duty and leave aside these controversial questions to which we have been listening for the past two years or more, both in and out of the meetings.

As I look upon these controversies I see in them two factors, on the one side an editor, on the other an educator, one surpassing the other by the breadth of my thumb-nail. Many self-styled pillars of the medical profession are nothing but promoters of dissension.

Let us drop all of this and try to meet on common ground, not on a battle field. What Dr. Lydston has said of legal matters, quoting the law on all of these questions is entirely without interest to the general practitioner. What we need in these meetings is, more scientific medicine and less wrangling over legal points.

We, of course, do not like oppression. It is un-American. There is, to be sure, some truth in the things Dr. Lydston has said. It is essential to do right but it is important to go about this decently and politely. We do not look well as spectators of a dog fight.

I do not mean this as any personal reflection upon Dr. Lydston, whom I first met some twelve years ago. We have always been friendly at our meetings, but since he has taken up the mantle of the medical lawyer and told us all about the un-American Medical Association I think we have a right to say something.

While it is difficult in all of this to locate the kernel of truth, yet I believe there is no sense in looking for the legal side of everything. You remember Caesar said "when right is to be violated, let it be violated for the sake of Government. In the rest cultivate piety." Let us meet on common ground—on the vantage ground of scientific medicine. Let us leave alone government, reforms, and the legal side of it. Just remember that Justice is represented, symbolically, as a woman—blindfolded at that. I should like to know how and where she is going to strike. I should like to know how we are going to get any more justice by going to law than we are getting now. I certainly should not trust anything to the courts but everything to common sense, and then we shall get along very nicely.

Dr. Aria Louis Dardiger: I should like to ask Dr. Lydston a few questions:

1. What is the money used for, which is collected for membership fee and for advertising in the *Journal A. M. A.*, aside from that of publishing the *Journal*?

2. How much money is expended in the interest of medical science in the form of research work, medical libraries, and donations towards the maintenance of a free hospital and a medical laboratory?

3. Do you intend to ask and abide by the opinion of the Supreme Court as to who and how the officers of the association are to be elected? Or do you intend to have the Court decide whether or not the association has a right to extend the membership throughout the United States and other countries, grant certificates for membership for \$5 a year, but not give them the privilege to express an opinion through *The Journal* or have the right to vote for officers, etc.?

4. And will Dr. Lydston be the only complainant in the case when it comes to trial? Will you please inform us who the other defendants are that will appear in court to defend similar claims as members of the association?

5. Will Dr. Lewis explain what he means by those who are labelled as privileged to have their say in *The Journal*?

Charles J. Lewis: I did not intend to say anything in this discussion, but inasmuch as Dr. Hultgen, who has just spoken, seems to think that *The Journal A. M. A.* can do no wrong, I wish to say that *The Journal* absolutely refuses to exchange with other journals which criticise its policies.

Dr. Mai: I have here (showing it) in my possession a medal which was cast at the fourth centennial in commemoration of the burning at the stake of the martyred reformer Johannes Hus (also a doctor, by the way). The inscriptions are: Johannes Hus, a. d. 1415, is condemned and his words from the pyre, "100 years hence you shall answer God and me." The answer came 1517 in the great reformation (of the Church by Luther). The application: Dr. Lydston and Dr. Lewis—so far they alone—have stated facts and proposed changes relating to the subject matter of reform in the A. M. A.

Will Dr. Lydston's fate be the usual one of the reformer? An answer is due from this assemblage.

Oliver Tydings: To me this is a very serious matter and it should not be lightly considered. It is a question of American independence. It is a question of the right of the citizen against a self-constituted organization (and I thought while Dr. Lydston was reading his paper that they have a precedent in the Standard Oil Company of to-day, an organization without an undisputed legal status, and yet, they know exactly where they stand and there they stand without the right of any one to say nay, by the right of the brute might of wealth).



It seems to me that if there is a defense for the conduct of the affairs of the American Medical Association, that those members who know its innermost workings should be here and defend it before this audience. I should like to ask those in authority if this respectable assembly is not entitled to a hearing at its hands. If they will not give it, then Dr. Lydston's appeal to the only authority who can make them hear is timely and right. When that verdict is rendered I think no man here questions what it will be. If the organization is to stand (and no member of it more earnestly hopes it will than do I) it will have to be understood that it is to be run for the good of all the members and not for the select few.

I have been a member of medical societies all of my medical life and I should be exceedingly lonesome without them. I am proud of our American Medical Association, but I must confess that I am not proud of some of its methods nor of those officers who use the organization for their personal gain. Not that they are not to be respected along certain lines, for they are past masters along lines not much to the credit of mankind.

But getting entirely away from the personnel of the organization and all questions of ulterior motives of some in authority—if this organization is to be perpetuated, if this organization is to stand for higher education and protection to the people, if it is to conserve your interest and mine, it must be organized and perpetuated along legal lines and we must show clean hands in order to advance the interest of an organization worthy of the highest and noblest aspirations of man.

I do not know that I can add anything to Dr. Lydston's position, but I do ask the members of this organization to consider this matter seriously. Take it to heart and see to it that the organization is not only put upon fair, legal grounds but that every question of chicanery and fraud be eliminated from this organization and let it represent and stand for reputable and intelligent citizenship.

George F. Butler: I was referred to as having been present at the meeting in St. Paul when the steam roller went over us. That was my first experience with steam rollers, although I have had them passed over me, backward and forward and sidewise since that time until I have been more or less squelched. I have been hoping almost against hope, that there would soon be found in the profession enough men with backbone to openly and courageously support Dr. Lydston so that he could notice it, and I am glad to see the number is growing rapidly.

Everyone not abnormally prejudiced knows that what Dr. Lydston is contending for is right, that there is nothing but justice in it and I think, as Dr. Tydings has said, we should treat this matter seriously. It is a serious matter.

Dr. Tydings has well said, that at these discussions there are never any representatives of the opposition present who dare deny the truth and justice of Dr. Lydston's allegations. This silence on the part of the gentlemen he refers to is, to say the least, very significant.

F. A. Leusman: I simply arise to second most emphatically every word that Dr. Lydston has spoken and every word that everyone else has spoken with understanding and logic, in earnest, and not in jest. If science has a basis, fundamental, it is free expression, in other words it is truly democratic. The biggest fool, as the evidence shows here to-night, has a right to be heard no matter whether science appears in the garb of theory, practice, policy, philosophy, etc. Eternal vigilance is the price of free thought and free expression.

When power grows insolent from long incumbency in office, when power becomes autocratic and repressive, when power in office uses the power of the office to muzzle any expression of opinion in the columns of its journal not friendly to their infallible (?) method of thinking and doing, it becomes imperative for a community of free and independent thinkers and members of the organization to raise their voices in protest at such usurpation and misapplication of representative power as indulged in by the present secretary and most of the trustees of the A. M. A. Dr. Lydston as the original standard bearer,

seconded, strengthened and reinforced by such leaders in the profession as Drs. Lewis, Tydings and Butler are the forces and agents employed by the evolutionary process to democratize in a scientific manner the future management of the affairs of the A. M. A. to the end that every man will not only in fiction but in truth have a vote and a voice free as the air and not strangled by the impudent assumption of authority delegated to unworthy representatives.

For the purpose of curbing all disposition to insolence on the part of our servants in office—the secretary and the trustees—we must make our officers of the A. M. A. immediately answerable to the members by instituting the recall, referendum and initiative, three potent weapons for use in case of necessity by all the members of the A. M. A., superseding delegates, trustees and secretary.

Dr. McKinlock: If such a motion is in order I should like to resolve that a vote of thanks be extended to Dr. Lydston for his very able paper and the manner in which he has presented this subject.

Seconded and unanimously carried.

Dr. Snyder: I move that this vote read that the rank and file of the membership of the Chicago Medical Society endorse the sentiments expressed by Dr. Lydston.

Dr. Emil Ries (Chairman pro tem): That would be impossible, Doctor.

Fred A. Leusman: I will amend that, with your permission, to read that those members of the Chicago Medical Society here present endorse the sentiments expressed in this paper.

Dr. Emil Ries: Will you, then, state the motion in full, as it now stands?

Fred A. Leusman: *Resolved*, That the sentiments expressed by Dr. Lydston in his paper and by Drs. Lewis, Tydings and Butler are heartily endorsed by the members of the Chicago Medical Society here present.

Seconded and carried.

Oliver Tydings: I was going to remark, before the motion was put, that it would have been impossible for Dr. Lydston to have read this paper before this society five years ago, or even one year ago. I take it as a favorable omen, gentlemen, that the paper is not only read, but that thanks are tendered the author.

G. Frank Lydston (closing discussion): I read only a short time ago in one of the journals devoted to the promulgation of certain medico-political views that I was the only insurgent in the A. M. A. I felt very proud of the distinction. To-night I find that there are many others. I do not know why the gentlemen who were invited to appear to-night to discuss this paper are absent. There is not a member of the society who knows anything of the work I have done in this cause who does not know that I have always made public what I was going to do and when I was going to do it, and if anything or anyone's views have been criticised and he has had anything to say in defense he has always been given an opportunity to say it. I should like to have heard from the other side. I have frequently been told by its defenders that I am wrong, that I do not know what I am talking about. I have even been accused by machine journals of being a paranoiac on the question of medico-political reform. Well, perhaps I am, but I assure you that I shall continue to be until the points at issue have been finally and effectually disposed of, when I shall return to the more profitable occupation of sawing wood for the family stove.

The president-elect of the American Medical Association, the chairman of the Board of Trustees, the manager-editor-secretary and several others who have done active work trying to suppress my views, were all invited to be present.

In answer to the gentleman who dragged out the name of our late Julius Caesar and asked me to think of him, I will state that the hint was unnecessary. I have thought of Julius Caesar constantly ever since this campaign began, and every time I have thought of what happened to him I have wept tears of joy.

Dr. Derdiger brought up the question of the money side of A. M. A. affairs, I have not gone into that. I presume it is all used in the management of the Association, the publication of *The Journal A. M. A.*, and for the trust fund.

If I knew that it was being put to any improper use you may be very sure that the membership at large would hear of it. The management should give us yearly a complete financial statement, it is true, but perhaps that is of no consequence. The inner circle says it is not.

Dr. Derdiger also asked me what I expected to find out by resorting to the courts. I merely want to find out whether or not I know what I am talking about. I have been told by certain A. M. A. officials that I do not. If the organization is legal, as the Association now stands, well and good. If it is not we want to know it and see that matters are put right. I have nothing to lose, no matter which way the decision goes. Some other people are in danger of losing everything. What we will get, if the decision goes my way, will be the ballot. Give us the ballot for one year and if we don't clean house I'll be surprised.

If my position is not upheld, it means that the court will have to reverse every precedent that has ever been formulated on the question of corporation law. This vitally concerns everyone who is interested in stocks and bonds.

As to the growth of the reform movement: even one year ago it would have been impossible to have presented this paper before this society. Some who believed in the reform movement were afraid, and some of the opposition were over modest. I have letters from editors of some of the most prominent and influential independent medical journals in the country in which they tell me that they are heart and soul with the reform movement, but are afraid to support it openly: that they would be ruined if they did so. One gentleman wrote me five long pages, on returning a paper which he had asked me to write for his journal. He told me the whole story of his life, and how he at last had his journal where it was paying, and said that he did not dare to jeopardize his business interests by publishing my paper and thus bucking against the machine. The editor of a medical journal in St. Louis asked me for a political article just prior to the meeting of the Mississippi Valley Meeting two years ago. Shortly before the meeting he returned the paper, saying that, although he was with me heart and soul, he did not dare publish it lest the machine should put him out of business.

You see what we are up against. We have three A. M. A. journals under the control of one man and we have new journals contemplated which will cover the whole field of medical scientific publications. When once these journals are established, the powers that be will absolutely control medical advertising and medical publication in the United States, and there is not one of you who could publish anything unless you were *persona grata* to the ring. I think I know human nature pretty well and I believe that when one gets thoroughly embued with the financial side of any movement, something of the trust element is bound to come in.

Now as to the reform movement: There is a reform movement, and it is no longer a one-man movement. We now have an organization, one which intends to carry on the fight until everyone in the profession is so strongly in sympathy with its ideas that he does not care who holds office so long as the Association is run upon democratic lines, and we have a reform brand of harmony that really harmonizes. I merely mention this because it has been stated that the new organization was formed in the interest of a certain public official. This statement is false, for I assure you that the new organization was formed solely to promulgate the reforms I have suggested and to keep the flag flying. The profession may rest assured that we will not stand for anything that is not to the best interests of the rank and file and of democracy.



# ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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MAY, 1911

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## DR. LYDSTON AND THE A. M. A.

There appears in this issue a paper, and the discussion, by Dr. G. Frank Lydston, read at a recent meeting of the Chicago Medical Society. The editor of this journal would be derelict in his duty if he allowed one of the statements in the article to appear without a protest, because he, the editor, has personal knowledge of the facts. The paper contains this statement, in reference to the reorganization of the American Medical Association:

"The minority report was suppressed by the physician who was given it to read before the Association. Although the ayes and noes were called for, the president ignored the call and ignored the protesters against the railroading, refusing to recognize any member of the minority in the executive session. I voted against the clauses, individually and collectively, pointing out *ex post facto* factors and the illegality of that, and of the summary action. The minority report which was suppressed by the man intrusted with it, embodied these ideas."

The editor, who had just left the presidency of the Illinois State Medical Society, presided at the meetings of the large committee on reorganization of the constitution and by-laws of the American Medical Association, held in the parlors of the Hotel Ryan on June 2 and 3, 1901.

He personally knows that this committee, after an all-day session, endorsed the report of the special committee. He saw the signatures of delegates from twenty-seven state organizations, the Army and the Marine-Hospital services attached to the report. He later attended the meeting of the General Executive Committee when the whole subject was threshed out. He was present when it came up in the general session and witnessed the triumphant endorsement of the new constitution and by-laws. But he does not remember any minority report or any refusal to recognize any one.<sup>1</sup>

In regard to this matter, the following statement is made by Dr. C. A. L. Reed, of Cincinnati, who was president of the Association and who presided at the meeting:

"At the St. Paul meeting constitutional requirements had been met by the publication, in 1900, of the action contemplated in 1901. There was no minority report from the Committee on Reorganization. If the Conference Committee, presided over by Dr. Kreider, had such a report I never heard of it. If there was such a report it was the business of those who signed it, not to give it 'to a physician,' but to present it to the General Session. I never declined to recognize anybody. There never was a parliamentary call or, so far as I remember, even a shout from the floor for the ayes and noes on the adoption of the report. There was no debate in the General Session, nor any demand for debate, which had been exhausted before the large Conference Committee. If Dr. Kiernan, as alleged, there spoke and voted, clause by clause, against the new constitution, it follows that the new constitution must have been submitted clause by clause and there must have been both free speech and a free ballot. If this is true I fail to see what the present row is about. What I do know is that the new constitution was adopted by the large General Session with unanimity and enthusiasm. And I know, furthermore, that as the sequel has proven, the whole thing was done with an intelligent and conscientious regard for the right of the individual member."

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1. At the Atlantic City session (1900), a committee of three was appointed to take up the whole matter [of reorganization] and to suggest changes which would cover the entire country and unite the profession into a solid and well-organized body. This committee first studied the plans of other organizations, especially medical bodies, including particularly the various state and county societies. On the results a tentative plan was outlined which, however, differed essentially from that finally recommended and adopted. The committee held meetings in different cities, calling on local men for suggestions, advice and criticisms, which were forthcoming and resulted in modifying the original scheme. A plan was then drafted and 500 copies of it were sent to as many physicians in the various parts of the country from whom many valuable criticisms and suggestions were received. The plan, still further modified and accompanied by an "argument" of some 5,000 words, was then printed in THE JOURNAL two weeks before the meeting in order that all members might have an opportunity to become familiar with it.

At the St. Paul meeting, in 1901, the matter was referred to a large committee composed of one member from each state and of the standing business committee, itself including thirty-nine members, making in all a committee representative of the whole country. Several sessions were held and every phase of the subject was discussed with thoroughness, further modifications and changes being suggested. This committee finally recommended the new constitution and by-laws, and the next day the general meeting adopted them, almost unanimously. Probably no subject of interest to the medical profession was ever given more careful thought and study by so large a number of competent men as was this problem of the reorganization of the national, state and county societies—in other words, the organization of the medical profession of the United States. The final result was not the work of a few men, but of hundreds of the most prominent and able members of the medical profession.—[Editorial, Journal A. M. A., March 12, 1910].

Dr. Lydston makes considerable of the fact that he requested certain officials of the A. M. A. to be present and discuss his paper, and that not one of them responded. The reasons why they did not do so would readily suggest themselves to any one familiar with the methods which have been pursued by the author in this matter. For some time past he has persistently carried on a campaign of personal villification against those same individuals. One cannot debate an issue by abusing one's opponents, and when one prefaces one's remarks with statements to the effect that his opponents are rascals, acting with iniquitous intent, he cannot expect the latter, if gentlemen, to discuss their actions with him. For instance, in his remarks on the legal aspect of the A. M. A., he says:

"I will not dwell at length on the fallibility (to use a mild word) of the opinions and advices of corporation lawyers in general, when retained by the particular corporation whose acts legal advice and opinions are purchased to sustain. I will merely state that as is well known, they are prone to give the sort of opinion and advice which most nearly suits the policies of their clients. I suspect that the 'eminent counsel' in this instance, were no exception to the rule as to advice in the matter of evading legal issues and cutting legal corners."

This is a direct insult to the Trustees of the A. M. A., as well as to their attorneys, as it intimates that the former were dishonest and wilfully tried to have the Association's acts illegal, and that the latter were corrupt and venal in that they deliberately sold to the former opinions which they knew to be wrong. When one descends to such a level he cannot hope to have honorable men follow him to discuss actions. Some people never learn the difference between a debate and abuse.

As to the charter of the A. M. A., it is a public document open to the inspection of all. Every official act of the Association done thereunder, has been openly published in THE JOURNAL, so that every person has had full knowledge thereof.

As regards the question of incorporation, Dr. Harris writes as follows:

"The American Medical Association was first incorporated in 1897, and the Trustees placed the matter of preparing the articles of incorporation in the hands of competent counsel. When reorganization was effected about ten years ago, the Board of Trustees again submitted the matter to other counsel. About four years ago the House of Delegates appointed a special committee and authorized it to employ legal counsel for the purpose of considering the possibility and the advisability of obtaining a national charter for the A. M. A. This committee employed counsel in New York City, but after working on the subject for a year or more the committee concluded that a national charter was out of the question, and so reported to the House of Delegates. As a matter of fact, this whole matter has been gone over by four different law firms since the incorporation, not including the counsel employed by the special committee in New York.

"Does it seem at all probable that all of the Trustees who have served the Association, from the first down to the present, were dishonest, and that all of the legal gentlemen whose advice has been



followed were corrupt and venal? If there are defects in the present method of conducting the affairs of the Association they are due to defects in the law itself, and not in the Association, and are applicable to every other similarly incorporated body, of which there are many."

The Chicago Medical Society has nominally 2,200 members, more than most of the state organizations composing the American Medical Association. It has 14 branches, the interests of whose members, according to the present arrangement, rest largely in the hands of the council of the Chicago Medical Society, a body of about 50 members. This council, as we understand it, has elected for two years delegates and alternates to the State Medical Society, and given them instructions as to their actions at the meeting of the State Society, which instructions have been obnoxious to a very large percentage of the members of the Chicago Medical Society. Certainly the methods of electing and instructing delegates from the Chicago Medical Society to the State Medical Society, have been most undemocratic, and yet as far as we know Dr. Lydston has never raised his voice to change the present methods of electing those delegates.

It is hardly worth while to take space to discuss other matters in Dr. Lydston's article. To paraphrase the words of another: that which is good in the remedies suggested is not new, and that which is new is not good.

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## THE NEW YORK WORKMEN'S COMPULSORY COMPENSATION ACT UNCONSTITUTIONAL

On March 24 the New York Court of Appeals handed down an opinion written by Justice Werner in the case of *Ives vs. South Buffalo Cross-town R. R. Co.*, which finally settles the unconstitutionality of the recently enacted Workmen's Compulsory Compensation Act of that state, on the ground that it deprives the employer of property without his consent and without due process of law. The opinion will sound a note of warning in the states of Ohio, Illinois, Massachusetts, Minnesota, Wisconsin, New Jersey, Washington, Montana and Michigan,<sup>1</sup> where legislation looking toward statutory compensation for industrial injuries is now pending or in contemplation—these states also have supreme courts.

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1. The last session of the Indiana legislature passed a modern Employers' Liability Act. The New Jersey Workmen's Compensation Act pledged by Woodrow Wilson was changed, at the last moment, and after the publication of the New York opinion, from an obligatory to an optional plan, and has just received the Governor's signature. We are now threatened with a plague of state laws—no two alike—bearing on this vexed question, and through lack of concerted action and uniformity in legislation are likely to land in a bog that will make our present predicament seem like good going. If there is any doubt but that the committee from our present legislature is on dangerous ground in recommending at this time the Workmen's Compensation Act prepared for the Illinois Liability Commission by Mr. Samuel Harper, it should be removed by a consideration of Dean Wigmore's plea in the April Illinois Law Review against "Playing a lone hand in Workmen's Compensation Legislation in Illinois." The dean contends that the Harper draft, even if enacted, would not stand the ghost of a show of being made a standard for uniform state laws, and urges that Illinois refrain from legislation until one of the bills recommended either by the National Civic Federation, the Conference of State Liability Commissions, or the Committee on Uniform State Legislation shall have been agreed on as a standard for all states.

The court decides that the statute traverses not only the state constitution in denying the right of jury trial, but also that of the United States in disregarding the fifth amendment. The police power of the state is held to be inadequate to reach the conditions dealt with by the statute. The court holds, however, that the legislature has the right at any time to correct, by revision of the existing Employers' Liability Act, abuses which have crept into legal practice under the titles of "contributory negligence" and "fellow servant." Thus the injured workman, who happens to live in New York, again sees little outside of a constitutional amendment or a lawsuit which is likely to lead him to a realization of the modern idea of workmen's compensation.

It will be remembered that the New York legislature also passed an *optional* compensation act which is still untested in the courts; but the uselessness of the Massachusetts act of 1902 forebodes that little will be accomplished by any optional law toward mitigating the predicament of the injured workman.

This decision will seem like nothing short of a catastrophe to the many who have taken either a practical or academic interest in the supposedly completed labors of the New York Employers' Liability Commission. If there still lurked any doubt, we are now prepared to concede that our ancestors certainly prepared in the constitution a social contract as unbreakable and as unyielding to modern conditions as an old-fashioned strong-box.

The decision has gone a long way toward crystallizing the conviction already nascent throughout the community, that our courts as at present constituted are a hindrance rather than an aid toward industrial progress. The truth is, our judges need larger educations for their larger duties in our modern industrial world; not in law—Heaven forbid, they have enough of that already—but in civics, economics, morals, and the humanities. And they need to cultivate a sufficient sense of proportion, orientation, and environment to lift them above the meticulous routine of their own calling. We are making the uncomfortable discovery that a judicial hierarchy is about as genuinely in sympathy with modernism as were certain ecclesiastical functionaries in the days of Moses and Martin Luther. Truly, times may change, but the mind of man, when it clothes itself in the archaic mysteries of law or theology, never. Humor cannot penetrate, nor common sense or public necessity dissolve the oracular mask behind which the high priests of our judicial Memnon spin fine constitutional reasoning to trip the unwary statute. Courts may reverse each other—themselves even—they are still solemnly infallible; but let the ill-starred statute vary the breadth of a hair from the strict letter of that fifth amendment which has become the unwitting bulwark of the incorporated American individual, and—bing! it goes into the ditch. Like the circuit rider's horse, courts nowadays seem to say little besides "property, property."

There is a touch of unconscious humor in the timorous glance of recognition which this New York judge throws toward that advancing

tide of public opinion which may in another generation rise high enough to deprive our judicial priesthood of its most cherished and most dangerous asset—the use, or abuse, of constitutional exegesis to overturn statutes. An asset, by the way, which other nations have refused to concede to their courts. “Courts must regard philosophic, economic and moral theories, however attractive or desirable they may seem, as subordinate to the primary question whether they can be molded into statutes without infringing upon the letter or spirit of our written constitutions.” Pure cobweb, plus megalomania, spun out of the ratiocinations of several generations of judicial imagination. How lamentably does this decision fail not only in cooperating with, but even in recognizing the spirit and necessities of our time. Were His Honor to spare a little of his valuable time to watch our surgeons as they remove a few of those unpaid-for hands and feet which are an hourly tribute to industry, he would hardly regard the situation as bred in the classroom or the study. This learned court seriously regards the present dilemma in which the master and his injured servant find themselves—and for which dead and gone English and American judges are themselves largely responsible—as a theoretical one, and complacently propounds—another theory. Having the added advantage of the last word, and seeing no farther from the depths of its cloistered chambers than the end of its own nose, the learned court of course decides in favor of that theory which happens to have taken root most deeply in the rules and precedents hedging about its own judicial mind—but pure theory none the less. The observer is reminded of that unlucky saying which decided the political fortunes of another distinguished and insulated New Yorker—“the tariff is a local issue.”

This episode also brings the well-wisher of American progress closer to the conclusion—already obvious to our foreign critics—that the interpretative function, which our judges often go far out of their way to assume, is not an unmixed blessing, in so far as the judiciary feels itself called on to usurp legislative duties under the cloak of constitutional protection. Truly the courts have become the real rulers of our latter-day republic. And it must be said as a sad corollary and in all seriousness that, in these days of national peace and industrial warfare, the Lord is with the highest-priced lawyers.

Nor are these the only counts in the indictment which the decision in the Ives case leads the citizen to draw against our judicial system. Where do we find stability of reasoning, or inexorable logic in Supreme Court decisions—especially if we compare those of different states? Why should these decisions on strictly constitutional or statutory points be as uncertain as the movements of the stock exchange? And why should our courts be so shrouded in their own mystery and dignity as to be incapable of giving advice or furnishing their opinions on important matters of pending legislation? Beyond the fact that opinions will always be found in line with that dead fetish of “constitutional defense” which the courts have carried around like a sacred ark ever since the day of John Marshall and the Dartmouth College case, no sane man can safely prognosticate what any decision will be on any given subject, or whether decisions in



two states will support or nullify one another. How then is it possible for legislatures to enter on intricate law-making involving the prolonged and costly work of legal and economic commissions, when there is no certainty that, in the end, their labors will not be pitched into the waste basket by courts which must or should have known months beforehand just what was going to happen. There seems to be at present no method by which the judicial tongue can be loosened in time to save delay in the preparation of valid statutes, but it is no secret that if we are to maintain our respect for law and judiciary some such technic must presently be grafted into our system. For if there is any real virtue in Supreme Court decisions, there should have been an open way by which that great body of lawyers, scientists, legislators, employers and employees which, at great and useless loss of time and money, prepared and espoused the New York law, could have been sufficiently warned that they were on untenable ground. Nor should it be necessary to have to leave it to a single bright corporation attorney with a single concrete case before him, to discover and prepare the window through which the judicial cat was to be coaxed to jump.<sup>2</sup> After such an expenditure of treasure and brains—coupled with the enthusiastic support of a governor who now sits on the supreme bench of the United States—this legislative effort and its judicial *débâcle* is a ridiculous fiasco exposing the arteriosclerosis which has overcome the system left us by the Federal Convention of 1787. Surely if we are not to be again humiliated by our own courts in the eyes of the world, there must be a feasible method soon devised by which opinions can be extracted from responsible courts before instead of after legislative projects have become solidified into statutes.

W. H. ALLPORT.

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### HARMONIOUS HOOPESTON

Among the smaller cities of Illinois Hoopeston, located near the northern line of Vermilion County eight miles from the Indiana line, and containing about 5,000 inhabitants, is worthy of consideration not only as a city peculiar in its political history, but worthy of imitation medically. The Editor was invited some years ago to address the society then known as the Tri-County Society, embracing Vermilion, Ford and Iroquois Counties, but for some reason was unable to meet the engagement. Having kindly forgotten his failure, the society, now a local organization but still drawing members from the three counties, renewed the invitation, which was accepted and the visit made Monday, April 24, 1911.

Hoopeston was found to be a little city situated in a beautiful country with some fifteen miles of paved streets, graveled hard roads leading to the country in every direction, and so thoroughly "dry" that the subject has not been voted on for many years. The city is under the old form of

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2. The writer is reminded of a retort once shot over his desk by the late Judge Gary at a loquacious attorney who failed to realize when he had a good thing: "Young man, I've already ruled in your favor; if you say anything more, I'll rule the other way."

government with a mayor and common council, and it is a peculiar fact that the mayor receives an annual salary of fifty cents and each councilman twenty-five cents. One would naturally suppose from experience in other Illinois municipalities that the salary would be merely a blind to a large graft somewhere on the side, but we were assured by all parties with whom we conversed that graft was absolutely unknown in the government of the city. At the recent election several prominent citizens contended for election to the mayoralty, the desire to serve seemingly being to have one's name enrolled among the honorable list of high-minded citizens who had previously filled the chair. Dr. A. M. Earel, a graduate of Rush in 1891, is one of the councilmen, a position to which he was recently reelected. Notwithstanding the absence of the revenue of the licensed saloon, the city is well paved, well lighted and supplied with an excellent quality of water, and possesses a chamber of commerce building which does credit to the community. The streets are clean, the houses well built. The business establishments show evidences of progress and prosperity. Several large canning establishments have been established in Hoopeston and give employment to hundreds of employees in the factories and fields. Dr. William P. Peirce, our old and valued friend, had passed to his rewards but a few weeks before, after a long and honorable career, the failure to see him being the only disappointment in our visit. Dr. A. J. Clay, secretary of the organization, and Dr. L. B. Russell gave us a warm welcome at the depot, which only ceased when we took the train for home. Dr. Clay's excellent wife had prepared a banquet at the Doctor's residence, which was attended by every resident member of the profession save one, and in addition the dentist and osteopath practitioner of the town were also there. Probably the method of treating the osteopaths in this community is peculiar and worthy of imitation. Two osteopaths practicing in Hoopeston some time since left the town, abandoned this cult and took a course in medicine. It seems that the present osteopathic practitioner recognizes the limits of his profession and frankly states that he intends taking a course of medicine at the earliest opportunity.

Soon after the banquet the members of the society gathered in the parlors of the Chamber of Commerce Building and were joined by a number of others from the surrounding cities who had made the journey in their automobiles on the excellent roads. Dr. Leroy S. B. Jones presided. It is hoped a profitable hour was spent at the meeting. The paper was discussed by Drs. Adsit, Johnson, Mason and McCaughey. The Editor only regrets that he was not able to pass a longer time with this excellent organization. He takes pleasure in praising Hoopeston as a city unusually harmonious as regards its medical profession, one in which each practitioner seems to vie with the other in saying nice things about his brother. As a consequence all of these gentlemen have the appearance of prosperity and undoubtedly the citizens of Hoopeston themselves are the gainers in the better service rendered by men having mutual respect and good will, and regard for themselves and the profession which they practice.

## EXAMINATION FOR PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE

### TREASURY DEPARTMENT

#### BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE

WASHINGTON, D. C., April 5, 1911.

A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street, S. E., Washington, D. C., Monday, May 22, 1911, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: (1) physical; (2) oral; (3) written; (4) clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade.

Assistant surgeons receive \$1,600, passed assistant surgeons \$2,000, and surgeons \$2,500 a year. Officers are entitled to furnished quarters for themselves and their families, or, at stations where quarters cannot be provided, they receive commutation at the rate of thirty, forty, and fifty dollars a month according to grade.

All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.



For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

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### TWO PROMINENT MEMBERS SICK.

Dr. E. Fletcher Ingals, a past president of the State Medical Society, and Dr. J. B. Murphy of Chicago, President-elect of the American Medical Association, are suffering with typhoid fever at their homes in that city. We take this opportunity to offer the sympathy of the profession of Illinois to these distinguished gentlemen, and to express the hope that they will soon be restored to their usual health and usefulness.

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### ANOTHER LOCAL JOURNAL.

The Brainard District Medical Society, an organization of the central part of Illinois, with a long and honorable history, and which has its headquarters in Lincoln, Logan County, has entered the editorial field by issuing the Brainard District Quarterly, the first copy of which has reached our table. Dr. H. S. Oyler is the Secretary-Editor, and no doubt will make a success of this publication. A number of advertisements of druggists and business houses will probably pay the greater part of the expense of issuing this publication.

We welcome the Quarterly to the ranks of Illinois Medical Journals.

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## Correspondence

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### NOTICE TO COUNTY SECRETARIES

OTTAWA, ILL., April 15, 1911.

*Dear Doctor:*—The council at its last meeting instructed me to write to the secretary of every component society insisting that the provisions of the constitution and by-laws must be complied with in reference to the election of your delegate, that is to represent your society in the House, at the annual meeting at Aurora.

I also desire to call your attention to the rule adopted by the House of Delegates of the State Society which is to the effect that no delegate from a county society shall be seated unless he brings proper credentials from his society, certifying to his election or appointment. These credentials shall be signed by the president and secretary.

About two months ago I mailed to every county secretary duplicate credential blanks, which please use as instructed in my letter accompanying same.

The object of this reminder, Doctor, is that you will be certain to elect a representative who will be sure to go and who will remain from

the first to the last session of the House of Delegates. The custom which formerly prevailed of electing or appointing a member of the county society who happened to be present at the annual meeting where the regularly elected delegate and alternate have not appeared has met with serious objection and at our last annual meeting quite a number of those were refused admittance to the House.

Therefore fail not to have the delegate bring with him his proper credentials and to send me a copy. Should you not have another meeting before the state meeting, please send this letter to the delegate. And now, Doctor, please allow me to urge you to follow the instructions here given. If you do so, it may save us many vain regrets.

Fraternally yours,

E. W. WEIS, Secy.

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## ANNOUNCEMENT OF THE AMERICAN RED CROSS

AMERICAN RED CROSS, NATIONAL HEADQUARTERS  
ROOM 341, STATE, WAR AND NAVY BUILDING  
WASHINGTON, D. C., April 24, 1911.

*To the Editor:*—The American Red Cross announces, in connection with the International Conference of the Red Cross which will be held at Washington, D. C., in May, 1912, that the Marie Feodorovna prizes will be awarded.

These prizes, as may be remembered, represent the interest on a fund of 100,000 rubles which the Dowager Empress of Russia established some ten years ago for the purpose of diminishing the sufferings of sick and wounded in war. Prizes are awarded at intervals of five years, and this is the second occasion of this character. These prizes in 1912 will be as follows: one of 6,000 rubles, two of 3,000 rubles each, six of 1,000 rubles each.

The subjects decided on for the competition are:

1. Organization of evacuation methods for wounded on the battle field, involving as much economy as possible in bearers.
2. Surgeon's portable lavatories for war.
3. Methods of applying dressings at aid stations and in ambulances.
4. Wheeled stretchers.
5. Support for a stretcher on the back of a mule.
6. Easily portable folding stretcher.
7. Transport of wounded between men of war and hospital-vessels, and the coast.
8. The best method of heating railroad cars by a system independent of steam from the locomotive.

9. The best model of a portable Roentgen-ray apparatus, permitting utilization of  $x$ -rays on the battle field and at the first aid stations.

It rests with the jury of award how the prizes will be allotted in respect to the various subjects. That is to say, the largest prize will be awarded for the best solution of any question irrespective of what the question may be.

Further information may be obtained by addressing the Chairman, Exhibit Committee, American Red Cross, Washington, D. C.

Very respectfully,

CHARLES LYNCH,

Major, Med. Corps, U. S. Army, Chairman, Exhibit Committee.

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### WAS THIS A MATERNAL IMPRESSION?

*To the Editor:*—Mrs. H., age 19, primipara was delivered of a 2½ pound child at full term April 10, 1911. There was no trace of a nose, in nasal passages on the face or in the mouth. Mouth and throat were normal. The eyes were small and round like bullets, no eyelashes or eyebrows. There were no orbits, eyes were set on side of face, twice the normal distance apart. There were no ears, just little buds in the normal locality ¼ inch in diameter. Head, neck, shoulders, arms, hands and legs were normal. Feet normal except the toes, there being only two on each foot which were exactly alike, they being much longer than normal, without any nails on them. There was imperforate anus, and an effort was made for both sexes. There was a rudimentary scrotum. No penis and a trace of the labia and clitoris. No urethra. About 8½ months before birth of child, mother was scared until she almost fainted at a snake in the wood-shed at her home. The snake was a viper. When she saw it the head was erect, eyes protruding and darting its tongue here and there, making a hideous sight. The child's tongue was longer than normal which it protruded like a snake. The child cried lustily at birth and lived 12 hours, having to breathe through its mouth; it was not able to swallow. Father is 23 years old, and only 5 feet high. Mother is 4 feet, 11 inches high, both in perfect health. Mother and father both white Americans. Child was cyanosed, blue and cold.

J. H. RAINWATER, M.D.

New Canton, Ill., April 14.

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### VICE-PRESIDENT STUBBS APPLIES THE HAMMER

CHICAGO, April 28, 1911.

The venerable Dr. James E. Stubbs has during the past year taken up so much space in the columns of THE JOURNAL that we are glad to give space to his "swan song" in the following letter to the Editor:

GEO. N. KREIDER, A.M., M.D., Editor Illinois Medical Journal, Springfield, Ill.

*My dear Doctor Kreider.*—Through your great kindness I have received my manuscript on Scarlet Fever and the State Board of Health.

I am very much obliged to you for being so considerate. I should have felt very much chagrined if it had been published. I did not realize that it was so "trivial," and the subject was too "trivial" to warrant giving valuable space in your journal for the discussion of so "trivial" a subject. But Doctor, did you realize, did you understand that you gave as much if not more space, in your very valuable journal, for one to make ridicule of me and my knowledge and thereby try to stick a knife in my back? And then to think that it was "too trivial" for me to try and square myself with the profession. Doctor, that was



cowardly. Perhaps I am a fool, but not as large a one as you think me. You pose as an A.M. as well as an M.D., but one would, on reading your editorial, suppose that you were just on the verge of entering some high school, and my article was "too trivial" to take up space which you appropriated to write your screeds against the State Board of Health. Why, my dear Doctor, the secretary of that Board is so far ahead of you that you are outdistanced in the first lap. You consider your journal the organ of the State Medical Society, but it sounds more to me like a hurdy-gurdy with asthma.

Do you consider that THE JOURNAL is published for your own individual benefit? What a victim to such an hallucination. Why Doctor, your editorials are insipid, dull, flat, without savor, tasteless, slush. Why, my "too trivial" article is classical English compared to your effusions of so-called editorials.

Learn to treat a fellow practitioner with due respect.

*Ultima ratio.*

Respectfully, JAMES E. STUBBS, M.D.

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## OFFICIAL PROGRAM

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### PROGRAM OF THE SIXTY-FIRST ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, AURORA, MAY 16, 17, 18, 1911

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#### ORDER OF PROCEEDINGS

*Registration office in the basement of People's Church, corner Main  
Street and Lincoln Avenue.*

#### FIRST DAY—TUESDAY—AFTERNOON

3:00. Call to order of Secretary's Conference, in People's Church, by  
D. G. SMITH, Elizabeth.

#### FIRST DAY—EVENING

8:00. Call to order of House of Delegates, in People's Church, by  
PRESIDENT A. C. COTTON, Chicago.

#### SECOND DAY—WEDNESDAY—MORNING

9:00. Call to order in General Session by the President, in the People's  
Church.

Invocation by REV. E. H. MONTGOMERY, Pastor First Presby-  
terian Church.

Address of Welcome by THOMAS W. SANDERS, Mayor of Aurora.

Address of Welcome by C. H. FRANZ, President of the Fox River  
Valley Medical Association for Kane County.

Response in behalf of the Society by the President.

Report and announcements of the Committee of Arrangements by  
CHAIRMAN J. W. McDONALD.

9:30. Call to order of the Sections, for reading and discussion of the  
papers of the program, in the People's Church.

12:30. Adjournment for luncheon.

## SECOND DAY—AFTERNOON

- 1:30. Call to order of Sections, for the continuation of Scientific program.  
Adjournment.

## SECOND DAY—EVENING

- 8:30. Reception, concert and luncheon, to be followed by a dance, by the local profession.

## THIRD DAY—THURSDAY—MORNING

- 8:30. Call to order of the Sections, for the continuation of Scientific program.  
12:00. Call to order of Medico-Legal Committee, in Divikey Hall, by H. N. MOYER, Chicago.  
12:30. Adjournment for luncheon.

## THIRD DAY—AFTERNOON

- 1:30. Call to order of the Sections, for the continuation of the Scientific program.  
Special Order—Oration in Surgery: "Uterine Hemorrhages: Diagnostic Aspects," JOHN G. CLARK, Philadelphia, Professor of Gynecology in the University of Pennsylvania.  
2:30. Special Order (general public invited)—Oration in Medicine: "Some Gifts of Medical Science to the World," by WILLIAM E. QUINE, Chicago, Professor of Medicine and Clinical Medicine.  
President's Address—"Conservation," A. C. COTTON.  
4:00. Call to order in General Session by the President, to receive report of House of Delegates.  
Induction of President-Elect.  
Final Adjournment.

NOTE: WEDNESDAY—1 P. M.—Reception for the ladies at the Y. W. C. A., lunch and automobile rides.

THURSDAY MORNING—Auto-ride and breakfast for the ladies at Y. W. C. A. at 9 a. m.

The Medical Program will begin at 9 a. m., May 17.

1. The Medical Service of the Illinois State Hospitals. Charles F. Read, M.D., Watertown, Ill.

*Synopsis:* General introduction. Hospital vs. custodial idea. Outline of work among the insane five and ten years ago. Present day conceptions in and out of institutions. Writer actuated by a desire to impress upon the profession of the state, the fact that the state service among insane stands for a scientific endeavor. Mental examination is a psychologic inquiry leading to a case-analysis which has in view the determination, in functional psychoses, of the mechanism of their origin. Psychoanalysis—word association test—psychotherapy. Laboratory research—psychologic and physical. The Psychopathic Institute. Hospital care of the physically sick; facilities. The question of operative interference. Nursing. Re-education. Ideals.

Discussion opened by Frank P. Norbury, M.D., Kankakee, Ill.

2. Experimental Transplantation of Legs. V. D. Lespinasse, M.D., G. Carl Fisher, M.D., J. Violet, M.D., Chicago.

*Synopsis:* 1. Rationale of the operation. 2. Why do we amputate in the ordinary crushing injury? 3. Causes of failure. 4. Repair of the various structures, skin, nerve, bone, muscle, fascia, blood-vessels and lymphatics. 5. Blood-vessel technic used. 6. Work of other experimenters. 7. Results obtained to date. 8. Application of these experiments.

3. The General Practitioner and Preventable Blindness. Thomas A. Woodruff, M.D., Chicago.

(Synopsis not received.)

Discussion opened by J. W. Smith, M.D., Bloomington.

#### GYNECOLOGICAL SYMPOSIUM

4. Vesico-Vaginal Fistulæ. Alice Conklin, M.D., Chicago.

*Synopsis:* Vesical fistulæ are of eight kinds; recto-vesical, vesico-vaginal, vesico-uterine, vesico-utero vaginal, vesico-ovarian, vesico-tubal, vesico-urinal, vesico-peritoneal. The causes are pessaries, syphilis, cancer, instruments during or following operations, alcoholism, sex, disproportion between pelvis and head in labor; use of forceps, deformed pelvis. The symptoms are: dysemia, cystitis, temperature or not according to the cause; escape of urine almost constantly, eczema. Patient becomes irritable, melancholy, constipated and anemic. Treatment: Operate as early as eight weeks after labor by either a vaginal denudation or vesical denudation with sutures or fill the gap in with uterus or use flaps from the continuous vaginal wall or any combination of the above methods.

5. Ovarian, Tubal and Tubo-Ovarian Hernias. Aimé Paul Heineck, M.D., Chicago.

*Synopsis:* Review of the English, French and German Literature that has been published on the subject during twenty years. These hernias have been noted at all periods of life: may be congenital or acquired, complete or incomplete, unilateral or bilateral, may or may not co-exist with hernias of a different type. Not infrequently other malformations of the internal or external genitalia are present or there may be noted absence of the uterus, of the vagina or of both. The uterine adnexæ may be the sole contents of the hernial sac. The condition of tubal, or ovarian, and of tubo-ovarian hernia in some cases has determined menstrual disturbance. Many of these patients have had repeated normal pregnancies and normal deliveries. The ectopic tube and the ectopic ovary are subject to the same disease as the normally located organ.

6. The Puerperium Treated as a Period of Prophylaxis against Subsequent Abdominal Pelvic Diseases. Carey Culbertson, M.D., Chicago.

(Synopsis not received.)

7. The Abuse of Local Treatment in Gynecology. Henry T. Byford, M.D., Chicago.

*Synopsis:* The abuse of the glycerin tampon—of ichthyol—of iodine applications of hot douche. The reason why patients are apparently benefited. What else can be done to keep the patients out of the hands of the Christian Scientist, Osteopath, etc.

Discussion opened by T. J. Watkins, M.D., Chicago; Franklin H. Martin, M.D., Chicago; H. C. Mitchell, M.D., Carbondale; O. B. Will, M.D., Peoria; Carl Beck, M.D., Chicago.

8. Intestinal Strangulation, with Case Reports. J. Estill Miller, M.D., Pittsfield.



*Synopsis:* Following remote injuries and inflammations. Importance of early diagnosis. Early operative interference, regardless of surroundings, to prevent grave toxemia. Remarks on treatment. Report of cases.

Discussion opened by J. H. Stealy, M.D., Freeport, Ill., and William M. Harsha, M.D., Chicago.

9. The "Health Conscience" and the Drink-Problem. Charles B. Johnson, M.D., Champaign.

*Synopsis:* In this country what has been aptly denominated the "Health Conscience" is of recent development. Those of us now in mature life recall a time when substantially all the people and a majority of medical men as well, were wholly indifferent regarding all that pertained to health conservation. But fortunately for humanity about a generation ago the first medical practice act was spread upon the Illinois statute books and following this was a gradual dissemination of a knowledge of contagion and the danger attending the spread of infectious disease. Recently competent investigators have become convinced that alcohol is responsible for as much morbidity and mortality as tuberculosis, perhaps more. If this fact be admitted is it not incumbent on the medical profession as a whole to lend its voice and influence towards curtailing the prevalence of alcoholism? That alcoholism is a disease, all admit. Then why should those whose duty it is to treat and prevent disease not deal precisely with alcoholism as they would with typhoid, tuberculosis or other preventable disease?

10. The Diagnosis of Acute Poliomyelitis. L. Harrison Mettler, M.D., Chicago.

*Synopsis:* New conception of the disease. Narrower etiologically, broader pathologically, and clinically. Its nosology. Certain and uncertain points in its diagnosis. Its typical symptomatology and variations. Importance of differential diagnosis. Treatment.

Discussion opened by Hugh T. Patrick, M.D., Chicago, and G. W. Hall, M.D., Chicago.

### *Special Order for 3 P. M.*

### KIDNEY SYMPOSIUM

#### Late Methods in Diagnosis of Kidney Diseases

11. Functional Diagnosis. Herman L. Kretschmer, M.D., and L. E. Schmidt, M.D., Chicago.

*Synopsis:* 1. General consideration of functional tests. 2. Need of a test that can be easily carried out and at the same time fulfill all requirements of accuracy. 3. The importance of estimating the renal function in surgery of the kidney. 4. Technic of the different tests. 5. Results of various groups of cases. 6. Deductions.

12. Some Insufficiently Appreciated Points in Urinary Diagnosis. Arthur R. Elliott, M.D., Chicago.

*Synopsis:* Clinical discussion on certain points in the interpretation of albumin in the urine and in the diagnosis of urinary tuberculosis.

13. Diagnosis and Treatment of Infections of the Renal Pelvis. L. W. Bremerman, M.D., Chicago.

*Synopsis:* This paper will deal particularly with the various methods of diagnosis of these conditions, will show clearly the various etiologic factors

involved, and will dwell principally upon the vaccine treatment and lavage of the renal pelvis.

14. The Value of Skiagraphy in Diagnosing Renal Disease, especially Renal Calculi, and the Importance of Radiographs Showing Lead Line Catheter *in Situ* for Differentiating Urethral Calculi from Phleboliths. P. S. O'Donnell, M.D., Chicago.
15. Eye Findings in Renal Diseases. C. E. McClelland, M.D., Decatur, Ill.
16. Unilateral Pyelo-Nephritis. E. Mammen, M.D., Bloomington, Ill.

*Synopsis:* The name does not describe a new disease, but is descriptive of a large class of cases. Early diagnosis difficult. Why? Symptoms. History important. Causation. Hematogenesis. From lymph channels. Various bacteria. Surgical treatment. Nephrotomy. Drainage. Nephrectomy.

Discussion opened by William E. Fuller, M.D., Chicago; D. N. Eisen-drath, M.D., Chicago; A. C. Croftan, M.D., Chicago; Charles E. Pad-dock, M.D., Chicago.

17. Double Hernial Sacs. Dean D. Lewis, M.D., Chicago.

*Synopsis:* More than one sac in a hernia is rare. The occurrence of double sacs, but one of which is recognized at the operation, may account for some of the early recurrences noted after operation. Two cases are reported. In the first case a large indirect sac was associated with a small direct one which had dissected downward through the outer fibers of the conjoined tendon and appeared at the external ring. This sac rested upon the inner side of the indirect one. In the second case two sacs were found in a direct hernia. Both sacs were relatively large. The median was attached to the bladder. A strong Hesselbach ligament had apparently split a direct sac—originally single—and had resulted in the formation of two large ones.

Discussion opened by William E. Hessert, M.D., Chicago.

18. Intestinal Toxemia. Milton H. Mack, M.D., Chicago.

*Synopsis:* This paper is a consideration of autointoxication from the clinical standpoint only, considering those conditions in which autointoxication plays an important rôle as an etiologic factor such as neurasthenia, gastrointestinal disorders, headaches, disturbances of metabolism, etc., discussing the predominating symptoms found as a result of toxemia and giving methods of diagnosis and treatment and the results obtained in these cases.

Discussion opened by Everett G. Brown, M.D., Decatur.

19. The Surgeon and "Near Surgeon." J. W. Hamilton, M.D., Mt. Vernon, Ill.

*Synopsis:* The paper will be taken up along the line of the duties of a modern surgeon relative to investigating the patient's condition before the operation, his duty during operation and his duty after operation, setting forth the lack of skill and thoroughness in investigating previous and subsequent to an operation as being the cause of a high mortality rate in some men's work.

Discussion opened by Charles Davison, M.D., Chicago.

20. Vesical Calculus. Charles L. Patten, M.D., Springfield.

*Synopsis:* Report of a case. Review of Literature. Exhibition of specimen.

Discussion opened by Gustav Kolischer, M.D., Chicago.

21. The Clinical Determination and Significance of Some of the Peripheral Signs of Aortic Insufficiency. Frederick Tice, M.D., Chicago.

*Synopsis:* Importance of a careful examination of the peripheral vessels. Method of determining the more frequent signs. Frequency of occurrence and significance. Report of cases with clinical findings.

Discussion will be opened by Robert B. Preble, M.D., Chicago, and Bertram W. Sippy, M.D., Chicago.

22. Studies of Mixed Infection in Pulmonary Tuberculosis. Their Diagnosis and Treatment. Roswell T. Pettit, Ottawa, Ill.

*Synopsis:* The importance of mixed and secondary infections with pyogenic organisms in pulmonary tuberculosis is a question which has attracted the attention of students of tuberculosis for many years. Some observers believe the tubercle bacillus is responsible for all the pathologic conditions found in pulmonary tuberculosis, and that the mixed and secondary infections are of little importance, while others believe that the tubercle bacillus alone is comparatively harmless, and the secondary invaders are responsible for practically all the damage done. In repeating the work of various investigators by using a very careful technic of isolation and cultivation, and by taking a comparatively large quantity of blood, I have been able to isolate the streptococcus and pneumococcus from the blood in thirty-five cases out of 100 examined. These cases represented all stages of the disease, some with cavities and temperatures, others without. From this work I conclude that the pneumococcus and streptococcus are important factors in pulmonary tuberculosis. Autogenous vaccines have been made from the organisms isolated from the blood in twenty-two cases. The results of treatment with these vaccines are compared with cases treated with vaccines made from organisms isolated from the sputum, and both these groups are compared with cases not receiving vaccines at all. It has been found that autogenous vaccines appear to have a marked protective action against hemorrhage and the effect of vaccines on the temperature curve is also suggestive.

Discussion opened by Frank Billings, M.D., Chicago, and J. W. Pettit, M.D., Ottawa.

23. A New Theory as to the Mechanism of Skull Fractures, and an Analysis of One Thousand Cases. F. A. Besley, M.D., Chicago.

*Synopsis:* The presentation and analysis of one thousand cases of skull fracture. The discussion of a new theory as to the mechanism of skull fractures, based on the examination of heads at autopsies. The diagnosis, prognosis and treatment of skull fractures is considered from the viewpoint of an analysis of one thousand cases treated at the County Hospital.

Discussion opened by A. J. Ochsner, M.D., Chicago, D'Orsay Hecht, M.D., Chicago, and William E. Schroeder, M.D., Chicago.

24. The High Caloric Diet in Typhoid Fever. Joseph L. Miller, M.D., Chicago.

*Synopsis:* Objection urged against feeding in typhoid; danger of increasing the tendency to perforation and hemorrhage, and inability of febrile patients to assimilate food. Milk after reaching the stomach, in reality a solid food. Even solid foods in semi-liquid state in ileum. Power of febrile patient to assimilate good. Advantage of high caloric diet. Statistics show tendency to perforation and hemorrhage lessened, convalescence shortened. Type of diet used.

Discussion opened by Charles Elliott, M.D., and J. B. Herrick, M.D., Chicago.



25. Congenital Umbilical Hernia, with a Description of a New Operation. Frank A. Palmer, M.D., Morris, Ill.

Discussion opened by Alexander Hugh Ferguson, M.D., Chicago.

26. Surgical Significance of Rheumatism. Alexander C. Wiener, M.D., Chicago.

Discussion will be opened by John L. Porter, M.D., Chicago.

27. Arteriosclerosis. M. S. March, M.D., Peoria, Ill.

*Synopsis:* 1. Is arteriosclerosis increasing with the exciting manner of living and habits of the present generation? 2. Causes known to produce arteriosclerosis. 3. Are we deteriorating as a race by forming habits that produce arteriosclerosis? 4. Treatment.

Discussion opened by A. R. Edwards, M.D., Chicago; W. H. Gilmore, M.D., Mt. Vernon, Ill.

28. The Anesthetist as a Member of the Surgical Team. T. W. Gillespie, M.D., Peoria.

*Synopsis:* 1. Any anesthetic has its dangers, and the greater the amount used, the greater the danger; therefore, short operations and trained anesthetists are needed. 2. The anesthetist should have a general working knowledge of the technic of the particular surgeon with whom he is working. 3. The anesthetist should be a graduate of medicine, familiar with surgical conditions, and having a knowledge of sensitive and non-sensitive structures. 4. The anesthetist should follow each state of the operation as it proceeds, and vary the anesthetic accordingly.

Discussion will be opened by Arthur Dean Bevan, M.D., Chicago.

*Special Order for 1:30 P. M.*

ORATION IN SURGERY. John G. Clark, Philadelphia, Professor of Gynecology in the University of Pennsylvania. Subject: Uterine Hemorrhages, Diagnostic Aspects. Lantern Slide Demonstration.

*Special Order for 2:30 P. M.* General Public Admitted.

ORATION IN MEDICINE. Subject: Some Gifts of Medical Science to the World. William E. Quine, Professor of Medicine and Clinical Medicine, College of Physicians and Surgeons, Chicago.

PRESIDENT'S ADDRESS. A. C. Cotton, M.D., Chicago.

SYMPOSIUM ON CANCER (OPEN TO PUBLIC)

29. Cancer in Animals. Maximilian Herzog, M.D., Chicago.  
(Synopsis not received.)

30. Cause and Prevention of Cancer. F. R. Zeit, M.D., Chicago.  
(Synopsis not received.)

31. Early Diagnosis of Cancer. M. L. Harris, M.D., Chicago.  
(Synopsis not received.)

32. Surgical Treatment of Cancer. S. C. Stremmel, M.D., Macomb.

*Synopsis:* In view of the fact that in a paper like this it is impossible to do justice to the title, the paper will be limited to carcinoma of the breast with brief reference to carcinoma generally; and a plea for earlier operative treatment of neoplasms before it is possible to make a correct diagnosis.

33. Treatment Other Than Surgical. Arthur Dean Bevan, M.D., Chicago.

*Synopsis:* 1. Can cancer be cured? 2. What are the means which are now being advocated for the cure of cancer? 3. What results are being obtained by these methods? a. Removal with knife. b. Removal with cautery and caustics. c. Use of x-ray and radium. d. Serum and toxin treatments. Summary: Urging financial support, both state and private endowment for cancer research.

Discussion opened by J. B. Murphy, M.D., Chicago; J. F. Percy, M.D., Galesburg; H. M. Richter, M.D., Chicago; and William K. Newcomb, M.D., Champaign.



### THE ORATOR IN SURGERY

JOHN GOODRICH CLARK, M.D., PROFESSOR OF GYNECOLOGY, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA

John Goodrich Clark, M.D., was born in Wayne County, Ind., June 4, 1867. He was educated in public schools until 14 years of age, and then entered the preparatory department of Earlham College, Richmond, Ind., where he remained two years. He next matriculated in the Ohio Wes-

levan University and became a member of the Beta Theta Pi fraternity. At the completion of his Sophomore year he joined a United States Civil Engineering party detailed for the survey of the Nez Perce Indian Reservation in northern Idaho. He later joined a party occupied in the survey of the Utah and Northern Railroad. At the completion of this survey he took up the study of medicine in the University of Pennsylvania and was graduated in the honor list in 1891.

Dr. Clark, who will deliver the oration in surgery this year on the subject "Uterine Hemorrhages, Diagnostic Aspects," entered in 1898 the Anatomical Laboratory of the University of Leipsic as a special student and began research work under Professors His and Spalteholz on the life history of the corpus luteum, and on the completion of this investigation he went to Prague, publishing two or three minor research papers from Professor Chiari's pathological laboratory in the University of Prague. On his return to the United States in 1900 he was elected professor of gynecology in the University of Pennsylvania. At present Dr. Clark is gynecologist-in-chief to the University Hospital and consultant gynecologist to the Woman's, Bryn Mawr, Germantown, Chestnut Hill, and other hospitals. He is a member of many professional organizations. He is vice-president of the American Gynecological Society and vice-president of the Clinical Congress of the Surgeons of North America. He is a member of the American Gynecological Society, American Medical Association, Southern Surgical and Gynecological Association, College of Physicians of Philadelphia, Philadelphia Obstetrical Society, Philadelphia Pathological Society, and consultant member of the American Clinical Surgical Society. As an author of medical topics, Dr. Clark is well known.

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### THE ORATOR IN MEDICINE

WILLIAM E. QUINE, M.D., LL.D., PROFESSOR OF MEDICINE AND  
CLINICAL MEDICINE, COLLEGE OF PHYSICIANS  
AND SURGEONS, CHICAGO

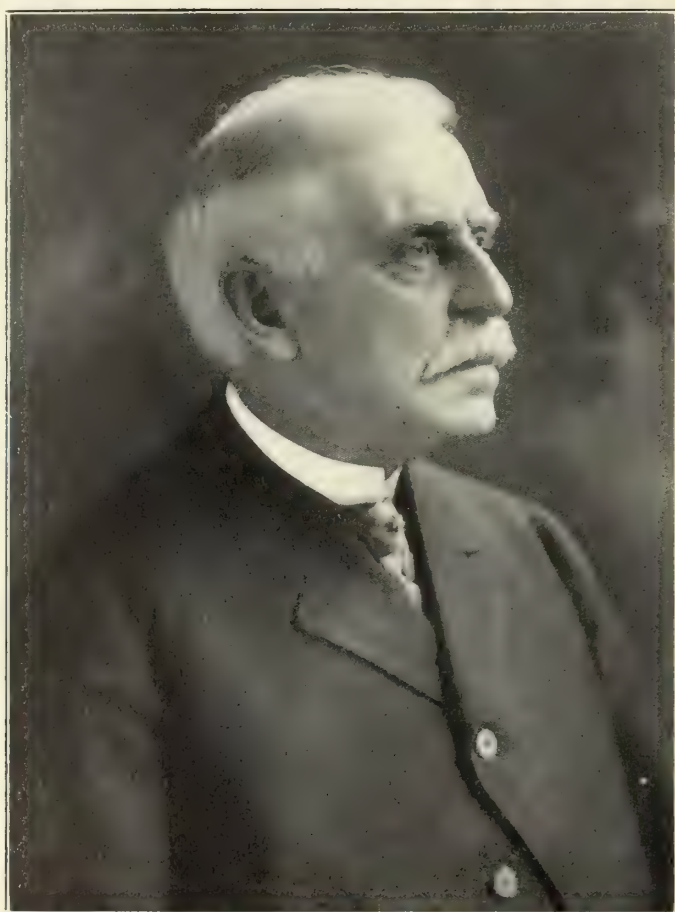
There are few men who have attained eminence in the medical profession at an earlier age than did Dr. William E. Quine. As a practitioner he has been at the head of his profession for more than thirty years and he still pursues his work with unabated vigor. As a teacher and exemplar his influence has extended to the ends of the earth. As a constructive force in the advancement of medical education he has had no superior in the west during the life of a generation.

He was born on the Isle of Man and with his parents came to this country when a child of 6 years. After graduating from the high school he took up the study of pharmacy and materia medica. This led to the study of medicine later and he graduated from the Chicago Medical College in 1869. On competitive examination he received appointment as an intern in the Cook County Hospital; and after the completion of his service he was made attending obstetrician and gynecologist to the hos-



pital. Soon after the attainment of his 22d year he was called to the chair of materia medica and therapeutics in his *alma mater*, where he taught with signal success until 1883. In that year he was elected to the chair of principles and practice of medicine and clinical medicine in the College of Physicians and Surgeons, where he has been the central figure until the present writing. He has been dean of the faculty for the past sixteen years and it was due largely to his influence that the

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college was affiliated with the University of Illinois. He received the honorary degree of LL.D. from the University of Illinois in 1904. During the same year he was elected president of the Illinois State Medical Society. For several years he served as president of the State Board of Health.

In every position whether in private practice or public service he has conscientiously performed his duties "with unwearrying patience and unswerving fidelity."

One of his greatest interests in life relates to medical teaching and I know of no one who has given more study to the art of imparting information to medical students. He has for nearly forty years ranked as one of the most eloquent and effective lecturers on medicine in this country. His students during all these years have had the most up-to-date instruction that could be gathered from the literature; and in addition have gained from him the highest ideals as to personal and professional honor, and a proper direction of aim and endeavor.

He has written little. His message has gone home to the medical student. The impress of his personality on his pupils, his colleagues and the institution with which he is connected has accomplished more than could scores of volumes. As a notable illustration of the influence of a strong personality, one of his beloved colleagues has cited the case of Socrates who, "without leaving a line of his own writing, exerted through his disciples an influence on civilization that will last as long as culture." Dr. Quine is an idealist. His last official act, up to this writing, the establishment of a department of instruction in "social service" in the regular curriculum of his college, is characteristic.

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## EXHIBITORS AT AURORA

### SPACES.

- 1-2. V. Mueller & Co., Chicago, makers of surgeons' instruments, invalid chairs, abdominal supports, surgical dressings, microscopes, etc.
3. Eskay's Food.
4. Victor Electric Company.
- 5-6. Borden's Condensed Milk Company.
- 7-8. Sharp & Smith, makers and importers of surgical and veterinary instruments, hospital supplies, elastic stockings and supporters, artificial limbs, trusses, etc.
14. Horlick's Malted Milk.
- 15-16. The Abbott Alkaloidal Company, importers of fine chemicals and chemical specialties.
18. Mellin's Food Company.
19. Armour & Company.
20. International Corset Company.
21. Henry K. Wampole & Company, manufacturing pharmacists.
22. The Maltine Company.
23. Chicago Medical Book Company.
25. Physicians' Record Company.
26. Burroughs-Wellcome Company.
28. G. D. Searle & Company, pharmaceutical chemists.
29. D. Appleton & Company.
30. Wm. Meyer Company, electrical apparatus, etc.

# COUNTY AND DISTRICT SOCIETIES

## ADAMS COUNTY

The Adams County Medical Society met Feb. 13, 1911, at the Chamber of Commerce Rooms, Quincy, with President Knox in the chair.

Those present were: Drs. Knox, Ball, Center, Nickerson, Wells, Kirk Shawgo, Austin, Koch, Gilliland, Pfeiffer, Christie, Brenner, Mitchell, Beirne, Rice, Ericson, Millen, Werner, Bloomer, Green, A. D. Bates, Schullian and Stine.

The principal discussion of the business meeting was the optometry bill. A motion prevailed that the legislative committee of the Adams County Medical Society act in behalf of the society in opposing this bill.

The scientific program was both interesting and instructive. It consisted in a short clinic and several well prepared papers. Two cases of persistent foramen ovale were shown by Dr. John A. Koch, one patient being a little boy and the other a young man. The first paper was a "Clinical Report of a Case of Hydatidiform Mole, with Exhibition of Specimen," by Dr. F. L. Brenner. This was extremely interesting both on account of its rarity and the beauty of the specimen.

Dr. John A. Koch, who has recently returned from Europe, gave a detailed explanation of "Salvarsan in the Treatment of Syphilis." Dr. R. J. Christie told us about "The Use of Moorhoff's Paste in the Treatment of Bone Cavities." This excellent paper concluded the program and on motion the meeting adjourned.

## COOK COUNTY

### CHICAGO MEDICAL SOCIETY AND CHICAGO UROLOGICAL SOCIETY

*Joint Meeting, Feb. 8, 1911*

The meeting was called to order by Dr. Robert H. Herbst, president of the Urological Society. Dr. W. T. Belfield read a paper on "Non-Operative Treatment of Bladder Tumors and Prostatic Enlargement." Drs. G. Kolischer and H. Kraus presented the subject, "Complete Suture of the Bladder." Drs. L. E. Schmidt and H. L. Kretschmer, the subject, "Topography of the Normal and Pathologic Ureter as Determined by the Shadowgraph Catheter." Dr. D. N. Eisendrath demonstrated with the stereopticon "The Interpretation of Kidney and Ureter Radiographs."

#### DISCUSSION ON THE PAPER OF DR. BELFIELD

Dr. G. Kolischer: I think Dr. Belfield in his remarks opened the discussion upon a very burning and important question of the day. I doubt if I can add much to what he has said, although I would like to add a few little amendments to what he has said as to the operative treatment and its results in bladder tumors.

When sizing up the possibilities of permanent results it is hard to throw together the results of former years and those of the present time. It is true that the statistics of former years were poor, but we must remember that they were gathered years and years ago. Just let me give you a little comparison; up to about fifteen years ago operations on one of the organs most often involved in carcinoma (the uterus) gave but 5 per cent. favorable results. That continued until Ries devised his method. Since this method has been in use the favorable percentage jumped to 20, later to 40 and some now claim as high as 50 and 60 per cent. cures.

The same holds true in bladder tumors. You must remember that a few years ago the cutting operations were the most irrational ever performed. That has changed somewhat and the results will change in proportion as we live up to the demands of rational operation.



It is true, as he says, that no pathologist has seen tumor of the bladder disappear spontaneously. One of the men having the widest experience in these cases, Dittle, claims but three times in his practice to have seen them disappear spontaneously in cases where he had declined to operate.

At the same time you must remember that there are inflammatory infiltrations, that cause similar symptoms. In abdominal surgery we open the abdomen with the thought of extirpation of the tumor if possible. If it is deemed impossible, or impractical the abdomen is closed up and sometimes the patient lives for years and years.

The only man of later years who could command a large number of tests because of the wealth of material which came to him was Nitze. He claims, as Dr. Belfield stated, that he had had more cures by the use of galvanocautic snare through the operative cystoscope in intervesical operations than by any other method. There is not the slightest occasion to doubt this statement because his findings were published by his assistants after his death. I may say advisedly that no other man had the experience he had.

In some inoperable malignant tumors of the bladder we relieve the patient's suffering by cauterizing the exulcerated, bleeding surface of the tumor. Taking this into consideration and the excellent results that were obtained by endovesical operations in benign tumors, we certainly must look favorably on Dr. Belfield's proposition. But, in whatever way we use high frequency currents, one must always keep in mind that we are not employing any method of a selective quality, but that we are simply using an actual cautery, that we are burning down tissue, which method in the cases mentioned by Belfield will certainly furnish results.

Dr. Emil Ries: Dr. Belfield's statements will hold true if we make the preliminary jumble of benign and malignant tumors that he has made. The benign, pedunculated tumor may fall off and float off and the patient may be reported as cured, but to believe that malignant tumors will be cured in the same way is a slap in the face of every law known to pathology.

The fact that operative treatment of tumors of the bladder has not been satisfactory does not prove that there is no difference between benign and malignant tumors. If you take your tumor to the youngest interne at the hospital (because no one who really knows, has time to make the examination) and he gives you a diagnosis upon which you cannot rely, then do not blame your tumor! There is just as much difference between these tumors of the bladder as there is between a wart on the nose and a carcinoma. There is nothing remarkable about destroying a wart by any kind of local treatment, knife, scissors, high-frequency or any kind of cauterizing treatment; but if any one comes and tells you that he has *cured* a malignant tumor of the bladder by high-frequency and has never taken off a piece of that tumor for examination beforehand, then I say that the results and conclusions are up in the air. You have relieved your patient of something (perhaps something that looked like a tumor) but you cannot say what it was.

If you wish to prove scientifically and conclusively that you have cured a malignant tumor you must first know positively that it is one. If you see a papilloma in the bladder and do not take it out and do not put it under the microscope, and by your treatment you cure it, you do not know what you have cured and I modestly assert that your results are inconclusive. First you must know what you are dealing with, then you can say what is the outcome. If you do not then I do not see how you can say anything very positive. You can say that your patient was cured of something that *looked like* papilloma, or something else, but that is not scientific investigation.

As to the application of high-frequency currents to tumors: I have nothing to say except that it is apparently excellent, simple, effectual and satisfactory in certain cases.

I wish to say a few words as to spontaneous disappearance of malignant tumor. That story appears quite frequently of late. I wish you had all read

a paper by Richardson read at St. Louis and published in the *Journal of the American Medical Association* a few weeks ago, in which he told of an extraordinary experience in a case which I will review briefly because it fits in exactly with what Dr. Belfield said about disappearance of tumor of the bladder. A woman was sent to Dr. Richardson for an examination. After making a diagnosis of a very malignant tumor, he advised her physician to have the woman operated on by a good man in the most radical way possible. Dr. Richardson said, frankly, that in spite of the operation which he was advising he could see no hope for anything but prompt recurrence and death. Well, the woman was operated on and on examination of the specimen the tumor proved to be nothing but a plain benign adenofibroma with a cyst in the center. This teaches us humility in our clinical diagnosis. If that breast had not been operated on, the tumor might have become smaller again and there would have been a case of spontaneous cure of cancer. That is the kind of tumor that disappears. Where are the true, malignant tumors that have been investigated microscopically by reliable men that have disappeared under any other treatment than operation?

The surgery of bladder tumors is in its infancy (I am speaking now of the malignant). Most operators are satisfied if they extirpate a piece of bladder wall and think they have it all. Does that correspond to what we have found to be good surgery in other parts of the body? No one thinks of calling it a complete operation if he merely takes away a piece of a carcinoma of the uterus. It is not enough to remove merely the primary seat. You must remove it all. Who has done that in tumor of the bladder? No one.

Dr. A. H. Ferguson: I had not intended to enter into this discussion, but being called upon and having had some little experience, I cannot refrain, and the presence of our essayist of the evening, who is one of the pioneers in prostatic work of the world further impels me to do so. I shall pass over the discussion of the bladder, although I have some ideas of my own in regard to it, and will devote the few moments I have to the prostate.

We have here with us Dr. Belfield, who was the first man to suprapubically attack hypertrophy of the prostate—that great bug-bear of the man over fifty. I am not sure (were he not so modest) but that he could lay claim to all the suprapubic work that had been later brought out by McGill and Freyer.

Here to-night, after a most ripe experience, Dr. Belfield comes forward and proposes certain procedures which will stay the knife in certain cases and conditions. He says that the high frequency current will contract and shrivel up prostatic hypertrophy.

The last few years, as the treatment of prostatic hypertrophy has developed in my hands (and at the hands of others as I find it in the literature of the day) I am convinced that a large number of cases have gone on record as complete cures from complete prostatectomy when probably this treatment of Dr. Belfield's, or simply the removal of the pathologic lobe, would have been sufficient.

He mentioned to us how Young of Baltimore turns the instrument, grasps the middle lobe and removes it. Before I read of that I used a nasal snare and removed the middle lobe with it through the perineum. So in all of these cases there is a period in the development where the condition may be effectually treated. Remove it if necessary, but if not necessary, then treat it according to the method advanced by Dr. Belfield and a great many men will be saved from the knife.

William T. Belfield (closing the discussion): Dr. Ferguson gave you the impression that I was the first to remove the enlarged prostate, which of course he did not intend to do.

Now as to the treatment of vesical tumor: it seems from what all three of the gentlemen said that my estimate of the poor success in the treatment of this condition by the knife has been correct up to date, but that in the future it is going to make a better record. I surely hope it will, but we have to take what has been and is, rather than what we hope will be, as a basis for our comparison.

I did not quote any statistics. I did quote the very recent utterances of a man whom we all know, Casper of Berlin and also those of Albarran in Paris, to the effect that "the knife was an exceedingly unsatisfactory instrument."

That the operative treatment will improve we all hope. It would be strange if it did not, but it is a sad fact, that the more extensive the operation becomes, the more extensive the fatal results, and we should not limit our attention to those who survive and forget those who do not. I think we shall have to admit that with our present knowledge we have nothing to be satisfied with.

There was some confusion, apparently, in Dr. Ries' remarks that this current had been successfully used in treatment of malignant tumors. So far as I know there has been no success in treatment of malignant tumors and I should be very much surprised if there should ever be a cure by it because, as Dr. Kolischer said, Nitze, with his marvelous experience and wonderful skill backed out of the malignant tumors and could not cure them with his method. Now the only difference between this and the Nitze method is that this can be used by anyone, while Nitze's can be used only by the trained and skillful. Nitze had the greatest skill that has yet been shown and his experience covered some four hundred cases and he limited his cauterizing operation to one hundred and fifty, showing that they were selected.

Suppose this will do with the ordinary man what cauterizing did in the hands of Nitze! The fact of the matter is the knife kills one out of every six or seven with benign tumor. This has not killed anyone yet and I do not see how it could. This alone would settle the matter so far as that is concerned.

Dr. Ries said he is still a believer in the microscopic diagnosis of malignant tumor. What I doubt is the microscopic examination of benign, as we pull them off or snip off a piece. A microscopic examination for benignancy of such tissue is not very satisfactory.

I should like to say, as I said before, that all I wish to accomplish by trespassing on your patience is to insist that, up to date, the knife treatment of vesical tumor is most discouraging and that in this simple contrivance we have the promise (we cannot have more at present) of accomplishing all that the knife will accomplish in benign tumors of the bladder without as high a mortality and without the distressing ordeal of an operation.

I have found that the way to get a very definite and practical answer to these points from doctors is to ask them whether, if they had a tumor of the bladder which seemed to be benign, if they would, in the light of present-day knowledge (even the latest knowledge) endure the knife treatment. Would you submit to the knife? or would you use this? I do not think we would need to argue half an hour to find out.

#### DISCUSSION ON THE PAPER OF DRS. KOLISCHER AND KRAUS

Dr. F. A. Leusman: While I highly appreciate the honor of being called on to participate in this discussion, I must admit that I came here unprepared, not expecting this emergency.

I wish to select from my operative experience for illustration three cases of prostatic hypertrophy sent to me from the country within two months for operation. All were old men ranging from 64 to 81 years. All three were in equally low condition due to a cystitis with general sepsis and autotoxemia. There was some temperature and mental clouding. The trip to the city had nearly given them the finishing touches.

In two of the cases, following the advice given by those who have had sufficient experience, I made a previous cystotomy and removed the prostate two weeks later. They are alive and well. In the third case, coming in soon after in a like condition, I did not resist the temptation of quick work and did in one sitting what I wisely divided into two acts in the previous cases. Result, death four hours after the operation. I am sure the two tempo operation would have saved this case also.

Of course in the absence of sepsis the two tempo operation is not required. I follow the custom of all operators known to me, and drain all my cases after



a prostatectomy. I do not believe that Dr. Kolischer intended to convey the impression that we were to leave no drainage after prostatectomy. I have no doubt that such may be done at times with impunity and great comfort to the patient; the question remains: is immediate vesical suture safe as a routine procedure? Is it as safe as temporary drainage even in selected cases? Time and the experience of many, not a few isolated cases, will answer.

Dr. A. Goldspohn: The only thing I have to add is in regard to technic. I think Dr. Kolischer simply omitted to state the importance in doing vesicovaginal fistula operations of turning in the mucosa and uniting it, so as to bring its raw edges more extensively in apposition; and then uniting the everted edges of the muscular and connective tissue layer of the bladder wall, by a separate tier of sutures that bring its raw surfaces also more extensively in contact.

Dr. Emil Ries: It is hard to see that it is anything very peculiar that we should get good results by uniting raw surfaces in suturing the bladder. We suture fascia and bring raw surfaces together and they heal and we suture the tendons and bring them together and they heal. Why was there this constant difficulty with the suturing of the bladder wall itself?

I think one reason is because the surgeons have been afraid to sufficiently detach the bladder all around. They have made small incisions to get into the suprapubic space and the bladder could not come together easily.

Here, again, as Dr. Kolischer said, the bladder surgeons might have learned from the gynecologist. Usually the small vesical fistulas healed nicely, but where the holes in the bladder were large, they always presented great difficulty because the parts would not come together, because they always were attached to some cicatricial tissue. Now we detach the bladder so that it falls together like an empty sack. Then there is no difficulty in bringing together the edges of the largest fistulas. Dr. Kolischer's method of suturing is something new to me. In order to make the bladder fall together he mobilizes the edges in a peculiar way. The way he does is to cut the muscularis from the mucosa, then it is no longer attached to the other tissue and will fall inwards. This can be done in another way by passing the finger around and detaching the bladder all around. Then it will also become free and fall together.

I have not tried the method which Dr. Kolischer suggests because, as I said, it is new to me, but I think it is good and should be tried.

Dr. Kolischer (closing his discussion): I only want to rectify a few points in which Dr. Leusman misquoted me. I did not advocate complete suturing of the bladder after prostatectomy, but I suggested that if an operator should close up the bladder completely after prostatectomy he should proceed along the lines discussed in my paper. Dr. E. Wyllys Andrews recently closed up the bladder entirely after a smooth suprapubic prostatectomy, but left muscle wound and skin incision open for 48 hours and then closed up by secondary sutures with good result.

I did not go into the details of the flaps operation for vesicovaginal fistulas, because that does not belong into my paper. If we have to deal with a loss of substance, that is one thing, and if we have to deal with the closing of a straight incision, that is another proposition.

The point that Dr. Ries took is an important one. For years I am advocating the shelling out and mobilizing of the bladder in all suprapubic work. So far as the folding in of the mucosa is concerned, that is not original with me: this idea is a French one.

The main point that I wanted to make and that I want to reemphasize is, that the dangers of infection jeopardizing good results lies not in the bladder proper, but in the structures above the vesica.

#### DISCUSSION ON THE PAPER OF DRS. L. E. SCHMIDT AND H. L. KRETSCHMER

Dr. A. H. Ferguson: I highly appreciate this paper. Several years ago a patient was brought to me with x-ray pictures showing stone in the ureter on both sides. We opened both sides and found no stone. If we had at our disposal a diagnostic procedure such as this all that would have been avoided.



In another case seven different shadowgraphs were taken and no stone demonstrated. We operated upon the left kidney and removed a stone!

Dr. Max Reichmann: Dr. Kretschmer asserts that the insertion of the shadowgraph-lead was to determine whether it is kidney or not. In two cases (one sent to me by Dr. Schmidt himself) a distinct shadow was found in the region of the kidney. After operation we found no stone. We found, instead, a calcified tuberculous mass.

As far as shadows are concerned, we must not forget that we often find these shadows very close to the shadowgraph catheter and still they are not stones and may lie anywhere in the pelvis. The only method, to my mind, to determine if these shadows are in the ureter or not is by inserting shadowgraph catheters and making pictures, then we see their position and can determine their nature. We can use intensified screens which allow us to make pictures in one-twentieth the time we could before so that we can even have the patient hold his breath, which will do away with the double shadows which are sometimes misleading and confusing to say the least.

Dr. Kolischer: There are two points on which I particularly want to take issue with Dr. Kretschmer. The first one is this: the doctor showed us a picture in which the shadow of the sound appears running from the bladder to the kidney in a tortuous way forming several spirals; he explained this phenomenon by telling us that the introduced wire forced the ureter into this meandering formation. I do not think that this theory could be satisfactory to anyone familiar with the subject. While it is true that the ureter is somewhat longer than the straight line from vesical end of the ureter to its junction with the kidney, observation of the picture will prove that if actually the ureter should go through all these windings it would necessitate that the ureter should be stretched to at least double its length. Such a dislocation of the entire course of the ureter would also necessitate a separation of the ureter from all the tissues surrounding it. I cannot persuade myself to believe that such a forceful action could be accomplished with such a pliable sound as a fuse wire is. It would also be in contrast to the results of the experiments that Dr. Schmidt and I conducted, when we devised and developed the use of the shadowgraph sound some ten years ago.

I think the explanation of this spiral shadow has to be looked for in another direction. If a wire is introduced into a ureter that is considerably dilated, then it will, so to speak, crawl upward by finding its way alongside the wall of the ureter, thus forming a spiral. This can be proven by the crossing of the windings in the picture and by a subsequent test. If such conditions exist and a fluid that is not penetrated by the x-rays is injected into such an ureter, a wide shadow will appear on the x-ray plate, thus illustrating the dilatation of the ureter, and the shadow will correspond in its width with the proportions of the spiral (here Dr. Kolischer went to the blackboard demonstrating by drawings what he intended to convey).

The next point I want to take exception to is this: The doctor mentioned that in one instance he tried once to pass a catheter into an ureter and did not succeed. At a next seance he introduced a wire and was able to pass it, consequently he gives us the diagnosis of a stricture of the ureter. I do not think that his argument is absolutely convincing. Existence of ureteral strictures can only be proved by more elaborate diagnostic procedures, such as numerous attempts at catheterization, use of an olive tipped sound, or a balloon catheter, instillation of adrenalin solution; or proof of a dilatation of the ureter above the suspected point. To diagnose a stricture of a ureter because one attempt at catheterization failed and a next attempt was successful may be misleading.

Dr. L. E. Schmidt (closing the discussion): These things were not forgotten. This paper did not pretend to go into them to any extent. We thought that in a paper of this kind it would be enough to make the statement that we attempted several times to catheterize this patient. We were unable to pass anything larger than a No. 4 French catheter. We tried to pass a larger one

fully ten times and were not able to do so, but we were able to pass a No. 3 or No. 4 French at every sitting. There was, therefore, no hesitancy in my mind in saying that there was an obstruction.

We have been doing a great deal of work with collargol and cargentas and they were used in this case, and then the diagnosis was made. But this is not always necessary. If you repeatedly catheterize an ureter and meet with obstruction every time, I am certain that there is some organic obstruction present. If you pass a 3 or 4 and cannot pass anything larger, then you have an obstruction.

Every living abdomen carries a certain amount of enteroptosis. I am convinced that if you have rapid loss of weight in a man who has been fat—loss of peritoneal tissue—you will have more.

So far as Dr. Reichmann's remarks are concerned I do not agree with him. I will admit you can see one or two outlines if you take but one place into consideration, but if you will note on these pictures there is complete variation up to the kidneys. If this was due simply to abdominal breathing I do not believe that the entire course of the ureter would show it.

As to diagnosing the phleboliths I will say that, as Dr. Reichmann says, with these pictures you can probably form more correct conclusions, but you can get at the same thing by placing the patient in different positions and say more positively whether it is stone or not. If the shadow appears back of the lead bougie you cannot say it is behind the ureter. If it is not directly in line with the lead bougie when the patient sits up there is a distance that can be demonstrated. Cabot of Boston has demonstrated this where the stone is apparently over the sacroiliac joint. Place the patient upright and put the tube at an angle; then from the difference in position of the shadow conclusions can be drawn as to its location.

So far as the first set, or pictures of normal cases, is concerned, I do not believe any work was done heretofore in connection with lead bougies and I believe there have been certain factors elucidated. There is a great difference in the normal course of the ureter. So far as the pathologic features are concerned I think there has not been anything new brought out. The pathologic pictures did not show up as well as was expected. They have been recently made and we had no opportunity to select the best ones.

#### CHICAGO MEDICAL SOCIETY

*Regular Meeting, Feb. 15, 1911*

The meeting was called to order by the president, Dr. Alex. H. Ferguson. On account of the absence of Dr. J. R. Fletcher, his paper on "The Stipula Nystagmus from a Broad Standpoint," was not read. Hermann Hille, Ph.D., addressed the society on "The New Chemistry in Medicine," demonstrating the subject by an exhibit of the results of his researches. During the presentation of the address the president was called away and appointed Dr. Emil Ries chairman pro tempore. Dr. G. Frank Lydston then read a paper on "Are Reforms Necessary in the American Medical Association and Its Constituent Bodies?"

Dr. Lydston's paper appears on page 603 and the discussion follows the paper.

*Regular Meeting, Feb. 22, 1911*

The meeting was called to order by Dr. Carl Wagner in the absence of the president. Dr. Isabella C. Herb read a paper on "Administration of General Anesthetics with Special Reference to Ether and Chloroform." Dr. Carey Culbertson read a paper on "Subinvolution of the Abdominal Wall." The paper of Dr. Wm. H. Wilder on "Metastatic Ophthalmia," was postponed for another meeting owing to the lateness of the hour.

Prof. J. J. O'Brien of Boston then gave an exhibition of Jiu-Jitsu.

#### DISCUSSION ON THE PAPER OF DR. HERB

Dr. A. J. Ochsner: The subject of anesthesia has been an interesting one to me for a long time. My especial study of anesthesia was the result of an

experience I had when I was an assistant of Dr. Parkes. We had a death in a child aged 12 or 13 years, from whose face a small mole was being removed, and as a result of that experience I initiated a system of observation of anesthesia which I have carried on ever since.

Each case is recorded and all of the facts noted on these report sheets (exhibits passed) are observed, so that we have, during the past 21 years in my clinic, observed carefully over 30,000 cases (the exact number to date being 30,674) of general anesthesia.

The first result of this work has already been described. Dr. Prince was the first one who took up this work in my clinic and as a result of his observations he introduced the drop method of giving ether. That is the method we have used almost continuously. For a time we anesthetized the patients with chloroform first and then continued with ether. Then we took up various methods. We investigated a method introduced by Dr. Henry of Omaha with ether, alcohol and benzine. Then for quite a long series we took up nitrous oxid gas and ether and for a few cases scopolamin and morphin, and spinal anesthesia in a few.

Invariably, after trying these methods lauded by this one or that one, we came back to the plain ether anesthesia. In the number of cases reported we have had two deaths, one in a case of extreme cigarette heart during an operation for hemorrhoids and the other in a very severe case of carcinoma of the uterus with small metastatic carcinomatous nodules of almost all of the other organs.

I believe at the present time the method introduced by Dr. Prince—the ether method which Dr. Herb has just described to us—is by far the best method we have. It is a safe method, if it is given for a reasonable period; that is, if the operation is performed with reasonable speed so that the patient is not exposed to the ether for too long a time there is not much danger from pneumonia.

In regard to preliminary drugs: I had an experience with this also while I was with Dr. Parkes. Professor Nancrede visited our clinic for a week and just before going away he said he was amazed at the comfort with which our patients took ether, and at the absence of vomiting and he asked Dr. Parkes to what he attributed it. Dr. Parkes said it was because for years we had been giving a quarter of a grain of morphin and one one-hundredth grain of atropin as a preliminary preparation half an hour before the operation.

This explanation was accepted but the head nurse came around to me and asked me to tell her what Dr. Parkes had said. I did so and she said she had never given it, because the nurse whose place she took had not told her to do so. She had been there about a year at that time. That is just about as accurate as we are in most of our ideas about anesthetics. As long as we have an enthusiast for an anesthetist all goes well, it makes little difference what method we use.

In my own observations, I have found that we rarely have any annoyance during the giving of an anesthetic simply because we employ this one little principle. we have a person who is enthusiastic over the method of administration and all those who give it do so under his direct supervision.

At the present time, however, we do give morphin and atropin in one class of cases, namely, in case of goiter operations, half an hour before we begin to operate we give one-fourth of a grain of morphin and one one-hundredth of atropin. Just before operating we place the patient at an angle of 45° with the head elevated so as to reduce the amount of blood in the upper part of the body and the operation is done without further anesthetizing. By this procedure mucus does not appear. In these cases you cannot have the mucus expelled from the mouth because you do not want it near the wound.

The point made by Dr. Herb of placing the head on the side is very good. Dr. Fowler invented an ether mask that could only be used when the patient's head was on the side and he compelled his anesthetists to use it. Dr. Ferguson of New York has a method of placing a strand of gauze between the cheek and the teeth and it has the same effect of draining the mouth.

In cases in which we have a choice of time for operation we give two ounces of castor oil the day before and then give liquids only until the time for opera-



tion, then give the ether by this method which has been described and there is very little vomiting.

For a time Dr. Prince thought that pressing under the clavicle he could press upon the phrenic nerve and the patient would not vomit. I think more probably, perhaps, his attention being more closely upon the anesthetic, he gave it more carefully.

As regards the selection of an anesthetic: I think if you always select ether you will make no mistake.

Dr. A. D. Bevan: Just one thing about the apparatus which Dr. Herb has spoken of in her paper. Dr. Reginald Jackson was in my clinic at one time and he found the internes struggling with a patient. He said "I will send you down something that will help you with your patients," and he sent down these. Since that time I have used a great many of them.

It is, as you see, a pair of handcuffs with a strap between. When the patient lies down the hands are at the side and the strap under him. There is no pressure upon the muscles and the hands are in a comfortable position. Then, with a broad strap above the knees anyone with very little power can control the strongest individual. They are really worth a great deal.

The catch is very simple and can usually be undone very quickly if there is occasion for artificial respiration. It is an important addition to the equipment of any clinic.

I wish to compliment Dr. Herb upon her work in giving anesthetics. I have been fortunate enough to observe her work for a number of years. She has had charge of our work at the Rush clinic and has had charge of the instruction of the senior students. I am quite a convert to the giving of anesthetics by an expert. I say "convert" because I used to take a different view of the subject. I used to think it could be given by any hospital interne or the nurse. As a matter of fact, the internes will receive much better instruction if there is a professional anesthetist in the hospital and while the internes are giving the anesthetics, they will do so under proper instruction and they will learn very much better.

I think probably the best anesthetists are women physicians. I think they do far better than the trained nurses. There is some question about turning this work over to the nurses. I received a letter from a man in Ohio who is much interested in the elevation of the standard of education and is much exercised about the possibility of having this important work turned over to individuals who are not medically trained. I do not take quite the same view he does, but in England the matter has gone so far that they have not only taken the giving of anesthetics out of the hands of any but the medical profession, but they are trying to take it out of the hands of dentists.

One might say that if nurses were well trained they would answer the purpose. I think that is true, in a certain sense, because where they are well trained and have received special instruction they can do good work, but on the whole I believe it is a far better field for the woman who goes into medicine and I should like to see this work well compensated. It is important and would be made attractive.

I want to say one word about professional anesthetists as a class: there is a tendency among some anesthetists to earn their fee in some cases, and to make it seem a very complicated procedure. You all know of some of the complicated apparatus on the market. I have seen one start in with a little nitrous oxid gas, then give a little ether, then a little more nitrous oxid gas and then some chloroform and so on and before he got through he had given half a dozen different percentages to the patient and made a great impression upon the medical attendants and upon the family who hired him. Simplicity, after all, is nearest the truth. If you will experiment with nitrous oxid gas and oxygen and then later add ether or chloroform you will only succeed in complicating matters. I would not give a picayune for such complicated apparatus for the purpose of giving certain percentages of this, that and the other thing.

Most of you have heard me talk nitrous oxid gas and I still believe it has a definite place, but I must say that since Dr. Herb has had charge of our work we are using it less and less. We have given up the sequence almost entirely and I believe there is a danger period which is sometimes of importance. That is the period when the patient goes out from the nitrous oxid gas and is crowded with ether. That is sometimes a period of serious moment to the patient. Possibly there may sometimes be a period for its use, but if ether is given properly the cases where it is indicated will be few. There is a tendency to use nitrous oxid gas and oxygen, or scopolamin-morphin and oxygen. There may be some cases where this is good, but it certainly does not compare with the use of ether by the drop method properly employed and I should like to emphasize the fact that these complicated methods of anesthesia will not compare in large series of cases with the simpler methods.

I quite agree with what Dr. Herb has said of the benefit of ether over chloroform. I received a letter from a man in Minnesota who said he had operated on a patient recently and had a typical case of chloroform poisoning. It is far more dangerous than ether and should be used in a limited number of cases.

So far as spinal anesthesia is concerned: I think that the fiasco of Jonnesco, followed by the deaths at the Cook County Hospital, was about enough to make us here at any rate quite positive in our opinion. There are certain cases where all of the evidence is properly weighed that spinal anesthesia is probably the better method.

I should like to say this for nitrous oxid gas: it has a definite field. I think in every clinic and the surgery of the general practitioner there should be a nitrous-oxid-gas apparatus. There is nothing better in the minor operations—lancing a felon or an abscess and operations of that character; in operations about the urinary tract with kidney insufficiency, enterostomy, colostomy, perforations in typhoid, cases where the patient is in such a condition that the least stretch will break the chain between life and death.

I should like to see the time when every hospital will see the necessity of employing a professional anesthetist and the time when the professional anesthetist is recognized as one of the essential parts of the surgical machine without which the best modern surgery cannot be accomplished.

Dr. Blech: This is a subject of great importance to every surgeon who is compelled to work with a non-specialist personnel. I think I am safe in asserting that the trouble seems to be in a failure to appreciate the difference between full surgical anesthesia and narcosis, which is ideal when resembling as much as possible natural sleep.

We all have had our experience with anesthesia, sad and good. I can conceive of nothing more shocking than sudden death from the anesthetic, long before the operator has had a chance to begin his work. This has happened invariably after chloroform anesthesia and, as a rule, after the administration of the first five or six drops. Years ago I used to employ chloroform anesthesia. My assistants were familiar with the niceties of technic and I felt safe as long as I knew that they watched every pulse beat and respiration. Then all at once I had two cases which nearly terminated fatally. This convinced me that chloroform is safe only when let alone.

The Germans have worked out the technic of the so-called ether open drop method to such a nicety that I feel safe under even trying circumstances. Formerly every operation was dreaded by me, now I enter my work with the assurance that nothing serious can happen from the narcosis.

I have had one death from nitrous oxid anesthesia. This was in a strange hospital. The man died while I was finishing the toilet of my hands. It was a case of anuria due to impacted calculi. There may have been a cardiac complication and I am not competent to pass an opinion on this method of anesthesia.

The principal thing to teach the personnel entrusted with ether narcosis is to instruct the patient to inhale and exhale deeply on command before the patient is anesthetized, irrespective whether morphin and atropin is given before operation or not.

The ether, which had best be warmed, is dropped on the Esmarch mask from the height of about a foot. This breaks up each drop and allows dilution with air. The rate should be about 120 the minute. Gradually the head is brought over the edge of the table and reclined up to an angle of 90 degrees, that is to say until the face forms a vertical line at right angle to the floor. In this position aspiration of mucus is impossible, the secretions are enabled to flow outward without a struggle and narcosis is quiet. Chloroform is given in ten to twenty drops on the same mask after the patient has shown intolerance for ether and then ether is resumed. The stimulating effect of the ether on the heart counteracts the depressing effects of the chloroform.

In a well conducted anesthesia the anesthetic can be stopped immediately after closure of the peritoneum in laparotomies and before the dressings are applied the patient is practically awake. This is the right moment to command the patient to resume his breathing exercises and thus rid the system of much ether. In threatened hypostasis the patient is made to sit up immediately after the operation and I think it a good rule to begin with this posture very early to insure a speedy recovery.

Dr. Edwin Pynchon: I have been very much interested in both the paper and the discussion, the moral given being that a special anesthetist should be employed in each hospital. I think this is extremely desirable. From my experience in going from hospital to hospital I find that I am usually served by the youngest interne, and as the internes change very frequently, I rarely ever have the same one twice.

In my line of work I use general anesthesia principally for the removal of tonsils and adenoids and in such cases ether is preferable to chloroform, particularly in young children. The usual custom is to get the patient well under with the mask when the operator works until the patient begins to come to, and then the mask is employed until the patient is again put under when the operator continues his work. In this way, working turn-and-turn-about, the operation is done. This particularly applies to work on the throat.

In order to overcome the disadvantages of the mask I decided to use Dr. Brophy's device and then, later, from my experience, I found it necessary to make some important changes in it, the result of which is a device which I have since used with a great deal of satisfaction.

My device consists of two bottles of the wide-mouth variety with a screw cap, one containing ether. With a handball air is forced through the ether and then passed to the second bottle, and from there through a rubber tube, which is supplied with a Y-shaped tip, with conical hard rubber plugs which fit snugly in the patient's anterior nares. In this way all of the etherized air is compelled to pass through the nose so that it is both warmed and humidified by the physiologic action thereof before it reaches the lungs. One great disadvantage of ether anesthesia with a mask is that the patient breathes cold air directly into the lungs, because mouth-breathing is chiefly employed, therefore post-operative bronchitis or pneumonia are often caused. With the method I have described this danger is done away with because the vaporizing is done outside the body, and the etherized air is practically at body-heat when it reaches the lungs, therefore the liability of pulmonary complications from this cause is avoided.

Another complication due to both the ether and the operation is increased salivation and blood, which may be drawn in the lungs and thus prove another cause for pulmonary complications. In order to overcome this I have adopted the plan of artificial aspiration. I tried several methods until at last I got down to something simple and practical, wherein a vacuum is produced in a bottle provided for this purpose. I have found this apparatus very satisfactory in nose-and-throat work and am thus able to secure a continuous anesthesia at a proper degree whereby pulmonary complications are avoided. Furthermore vomiting is to a large extent prevented as none of the secretions go to the stomach, and I also have the satisfaction of not having the anesthetist in my way or of my being in his way.



The aspiration device is suspended by a tape about the neck of the assistant. He holds the tongue depressor in his left hand and the aspiration tip in his right. Then as fluids gather he withdraws them by introducing the tip, a nurse meantime operating the suction pump.

I have adopted the Rose position, wherein the patient's head is held back at an angle of 45 degrees. I fail to find a hospital here fitted with a table designed for this position, so am forced to conclude that it is not commonly employed as in England.

I can add one point regarding the bracelet device shown by Dr. Herb. I have never used the device shown, but I have used something similar to it. I take a piece of tape three-quarters of an inch wide and over a yard in length and after tying the ends together make a double loop. These are secured one about either wrist of the patient and thus the hands are held in position crossed over the body. I will say that Dr. Herb's device appeals to me very strongly and I shall modify my method to conform with the position she advises.

I start in with the mask, then when I am about ready to operate the anesthetist takes it away, adjusts the nasal tips and in this way continuous, steady anesthesia is maintained. As the second bottle is empty it is utilized to catch any stray drops of ether, should the handball be too forcibly compressed. Inside of the second bottle is a smaller bottle containing chloroform. As the anesthetized air comes in, if any chloroform is required to produce more relaxation a little rubber ball on the outside of the bottle is squeezed slightly and the chloroform is thus forced up so that whatever is needed is injected into the outer bottle, and is thus added to the stream of etherized air. The amount of air passing through the ether can be regulated by the use of a swinging lever on the top of the first or ether bottle. By use of this lever the anesthetist can increase or diminish the per cent. of ether in the air stream to conform with the varying requirements, or the degree of anesthesia required.

Dr. Oliver Tydings: I am much interested in Dr. Ochsner's remark that if when operating one will confine himself to one anesthetic and let that be ether he will get along all right. That calls to my mind the time that I was an interne at the University of Maryland. It was my work to give the anesthetics and I remember reading an article by the late Dr. J. J. Chisolm in one of the medical journals that "chloroform was, through natural science, the greatest gift from God to man." I continued upon that theory and used chloroform continuously in surgical work for a great many years. I never had anything that even looked like an accident. Dr. Chisolm told me that he had used it in something like 10,000 cases without one. I used it for 25 years (fully that) without an accident when one day, about six or seven years ago I was preparing to do a mastoid (the gentleman who was giving the anesthetic knew his work, he had done work in the Presbyterian Hospital for years and was very capable). I remember particularly that on this occasion, just before I started to look over my instruments, that I did not know the name of the patient, so I asked the nurse. She said she did not know, but would ask him. She did so and he answered while the anesthetic was being given, before I could turn to go to the instrument table he was dead.

I believe there is a law of coincidence. I do not believe that chloroform had anything to do with that death. He had been walking around with a mastoiditis for thirty days. I saw him the day before and told him to come into the hospital and I would operate. I think there must have been a thrombus which slipped into the heart and he died because of a heart-plug. He was gone before I could turn around and yet he had spoken intelligently but a few seconds before. We had everything at our fingers' end but we were not able to resuscitate him. In all my previous years I had not had an accident, nor have I since.

I do not mean to say that I confine myself strictly to chloroform, because I do not. Like Dr. Pynchon, I use anesthetics mostly for adenoids and tonsils. The position I use is to have the head 15 to 20 degrees lower than the feet and then there will be no possibility of blood getting into the lungs. I know that is the easiest way to operate upon the throat and I believe it has some advantages

as to safety. As to whether chloroform or ether is safest, I confess that in the hands of an untrained man I would rather take ether. I believe that it is possible to do less harm with it and the method used in Dr. Ochsner's clinic is a most admirable one.

I should like to ask Dr. Herb if she can offer any explanation of the sudden death of my patient.

Later: To make my case plain I will just add that the bottle was a one-ounce vial. You could not have put a teaspoonful more in the bottle. The man who was administering it says he had not at the very outside taken more than 30 drops from the bottle.

Dr. Nelson: I was educated to ether at Harvard. I went into service during the civil war with the idea that ether could not kill, but that chloroform was very liable to. In the army we were obliged to use chloroform because we could not get ether enough transported to keep supplied. During one of the battles when there were a great many men to be taken care of and it was important to do the work rapidly (we only tried to take care of the very serious ones, the others were cared for by nurses and comrades), we had our hospital tent just behind the brow of a hill, as near the firing line as we could. The sun was hot and a high wind was blowing—I remember that particularly because of what followed. A strong, hearty man, one whom you could well imagine may have been a blacksmith, was brought in shot through the humerus. There was no thought of anything but amputation. He was placed upon the table and given chloroform. Several thicknesses of towel were placed over the face and the chloroform dropped upon it, the man getting the vapor now fast and now more slowly, as the wind happened to be blowing. The man was almost ready for operation when he stopped breathing and was dead. We tried all the means of resuscitation at hand but he could not be revived. He was taken one side and the next patient was brought on, who (if I remember rightly) came for amputation of the limb below the knee. He was given chloroform in the same way and in a few seconds he was in a very dangerous condition. Fortunately he was revived. The chloroform was sent to the Surgeon General at Washington for examination to see whether it was impure, but it was Squibb's and of course nothing was found in it. I did not give it myself in the first case, but I did in the second.

To give you some sort of an idea of the rapidity with which it was given, I will say that my fingers were almost frozen by the evaporation in the breeze and I am sure that some of the time he got a great deal and some of the time none at all. It is just that uncertain amount of either ether or chloroform that makes them dangerous.

After coming to this city a year or so afterward one of my first cases for giving an anesthetic was in a dentist's chair. The dentist insisted upon chloroform being given. I did not know better than to attempt to give it in an upright position and the first thing I knew the patient was in a serious condition. We placed the patient in a reclining position and soon resuscitated her. One of the dangers in chloroform is the nervousness of the patient and the excitability and consequently the irregular respiration and the variable amount of the vapor inhaled. Sometimes they are getting a small quantity, sometimes a large and sometimes none at all, and in the hurry of giving the chloroform the danger arises. Undoubtedly there is far more danger in chloroform because it is stronger, but the manner of giving has very much to do with the question of safety.

Dr. Isabella C. Herb (closing discussion): In regard to Dr. Ochsner's remarks: we gave many of our patients scopolamin-morphin and finally decided to abandon it on account of the vomiting. In goiter operations very little chloroform or ether is needed. We had an accident which was the cause of our abandoning it. A physician's wife came in for a major operation. I anesthetized her. During the summer it was necessary for her to come back for another. She did not vomit after the first anesthetic at all. An interne gave the anesthetic for the second operation and he gave her a very small dose of morphin-scopolamin.

She came to the operating room, was operated upon and went back to the room and she vomited for 48 hours. Now if it was not attributable to that dose of scopolamin-morphin I do not know what caused it, because she did not vomit after the first anesthetic.

As to gauze: it is not necessary if the patient's head be turned to the side. Vomiting during the operation does not necessarily mean that drugs have been given, but just that they are waking up.

Dr. Bevan spoke of the simple methods. We can always advocate that. We believe that the simpler the methods and the more quiet the anesthetist the better. We believe that giving ether in the regular way, without interruption—changing from ether to gas and back again—is always the better plan. We believe if the patient is kept regularly asleep, instead of drowning them one minute and having them nearly out from under the next is always more liable to produce shock and vomiting. Keep them quiet and easy. During some operations of course it is necessary to have more profound narcosis but do not wake them up during the operation. We do not practice giving nitrous oxid gas except where patients have had ether and are afraid of it.

I might say something as to spinal anesthesia, but the literature of the day is full. Cases are reported to have died a year or a year and a half after the anesthetic was given. Many have developed paraplegia. Experiments upon the lower animals show that the cells of the spinal cord are injured beyond repair. Some who have not died suffer from constant head-ache, back-ache, etc. So that it is not only the immediate effects which we have to take into consideration, but the more remote and lasting results.

In regard to chloroform and the sudden deaths reported: usually when it kills (except through degeneration) it does so in the first few whiffs. After they are once thoroughly asleep they rarely die. I should be very much inclined to indicate chloroform as the cause of the death in the case where the nurse spoke to the patient one moment and then with the first whiffs of chloroform he died. That is usually the way they do go. I recall one similar case in which artificial respiration was performed for three or four hours but we were not able to resuscitate the patient.

As to nitrous oxid gas in heart lesions: we think ether can be given in heart lesions, even in fatty degeneration. We do not recommend it, but it should be settled by the imperativeness of the operation. It is really not the lesion, so much as it is the condition of the heart-muscle itself which should be considered. Internes sometimes say "now be careful, this patient has a heart murmur but it does not amount to much." Sometimes these cases are far worse than those in which there is a distinct murmur. Of course the ether must be given carefully. It is a stimulant, but no one should think of giving chloroform in these cases. Nitrous oxid gas raises the blood pressure a great deal more than does ether.

One physician spoke of beginning to give the ether by dropping it down upon the mask from a distance above it. We begin with the mask away from the face and in that way the patient received plenty of air mixed with the ether. Then we gradually put it down and the patients never complain of suffocation.

Placing the head away back is not as comfortable to either the patient or the anesthetist as it is to have it on the side. We also believe that our patients should be awake when they are leaving the operating room. As to when to stop the anesthetic: that depends entirely upon the rapidity with which the surgeon works. When the anesthetist works with one for a long time he can soon learn how he works and will know when to stop so that the patient will begin to come out before the dressing is quite done.

In tonsillitis and adenoid operations, many operators find that if the patient is very deeply narcotized they can finish the operation before the patient awakes. If they do not operate so rapidly, or even in jaw cases, Dr. Potts has perfected an instrument which will give very great satisfaction. The patient is put to sleep in the regular way and then the anesthetist switches to this apparatus. It can be used either in the nose or with the mouth gag and it works with the



foot, leaving the hands free. The bottle is placed down with the foot-rest and there is no danger of the ether passing into the mouth.

In the case of sudden death: nothing but an autopsy would have shown the cause. However, I am inclined to feel that it was the chloroform, knowing, as I said before, that it always kills at the beginning of the anesthetic.

*Regular Meeting, March 8, 1911*

The meeting was called to order by the president, D. Alex. H. Ferguson. Dr. Wm. Cuthbertson read a paper on "Diverticulitis of the Intestine."<sup>1</sup> Dr. V. C. David read a paper on "Intermittent Hydrarthrosis." Dr. C. Hubart Lovewell read a paper on "Some Practical Applications of the Caloric Check in Feeding."

DISCUSSION ON THE PAPER OF DR. DAVID

Dr. G. W. Hall: I would like to ask Dr. David if sodium cacodylate has been used in any of these cases, as one of the arsenic preparations. Urotropin is secreted by the spinal fluid and it has been recommended in the treatment of some forms of meningitis for that reason. It would be interesting to know whether any reaction for this preparation could be obtained from the fluid in such joint cases as these. It is interesting to note from the statistics given by Dr. David that the knee joint was the one most frequently affected as it is the joint of greatest activity and in this respect corresponds with the joint involvement in rheumatism.

Dr. Carl Wagner: I do not wish to touch upon this subject from a surgical standpoint. I do not see any reason why we cannot have them here as well as there. We may also suggest other remedies transportable which can be used readily at a distance from the place where they are taken, notably the radio salve and other radio preparations.

V. C. David (closing the discussion): I do not wish to add anything, but answering the question of Dr. Ball I will say that so far as I know sodium cacodylate has not been used but I believe I am safe in saying that probably every other drug has been and I think that the efficacy of any one drug has been time and again proven to be nil.

*Regular Meeting, March 15, 1911*

A regular meeting of the Chicago Medical Society was held, March 15, 1911, with the president, Dr. Alex. H. Ferguson in the chair. Dr. Wm. M. Harsha read a paper on "Aids in Abdominal Diagnosis." Dr. F. Kreissl read a paper on "A Rational and Efficient Treatment of Acute Gonorrheal Urethritis." Dr. A. Goldspohn read a paper on "Why the Vermiform Appendix Should Usually be Removed, when an Abdominal Incision, Made for Other Causes, is Available and the Condition of the Patient Admits of the Additional Operating."<sup>2</sup>

DISCUSSION OF THE PAPER OF DR. KREISSL

W. T. Belfield: This is an admirable presentation of local treatment. I think, however, that the author was unfortunate in entitling his paper "A Rational and Efficient Treatment of Acute Gonorrheal Urethritis"; for by his own showing it is not at all "rational" and not very "efficient." This criticism applies not merely to the method which he has outlined but to every method of urethral injection, for reasons which we all understand and which he has indicated.

The gonococci are not perched upon the topmost epithelial cells; they penetrate into the lymphatics and into the lacunæ, some of which open forward toward the meatus, some backward toward the bladder. Injections do not penetrate any of these, so all our methods of treatment by injection must be inefficient. Dr. Kreissl

1. The paper of Dr. Cuthbertson appears on page 555, followed by the discussion.

2. For text of paper see page 593.

says he is satisfied if he gets disappearance of the gonococci in from twenty to thirty days. Now in one-half of that time the gonococci have often invaded the deep urethra utricule, perhaps vesicles; and the urethral injection could not be efficient. Any treatment worthy the name "rational and efficient" must be one that acts through the blood; a substance which arrests the pernicious activity of the gonococci, wherever they may be esconced; something analogous to the diphtheria antitoxin. We have nothing of that sort against the gonococcus. Our vaccines are neither so rational nor so successful as is the antitoxin for diphtheria, which directly arrests the infection, neutralizes and arrests the process. Vaccines merely call upon the tissues for extra exertion; the tissues may or may not respond to the call.

I am inclined to think, therefore, that while Dr. Kreissl has given us an admirable exposition of the treatment which in the main we are all using and will use until a rational and efficient method is brought forth, yet his method cannot properly be called efficient.

V. D. Lespinasse: This method which Dr. Kreissl has brought up for our attention this evening is valuable in this way if in no other, namely, with it we can do no harm and if my experience and observations have taught me anything they have taught me that the average injection for acute gonorrhea is harmful in the strength given. The patient invariably complains of burning and smarting and in that way we do more harm than good. In surgery the use of strong antiseptic has been given up and we are content with washing with weak solutions and inhibiting bacterial growth. In gonorrhea it is the same. We cannot kill the gonococci and the only thing we can do is to inhibit the growth of the bacteria that are in the canal of the urethra. We should aim to keep the cells at their highest point of resistance and in doing that we do all the good possible and no harm.

Patients with this disease are crying and imploring for quick cures and asking for something that will burn. They seem to think that the more they are burned, the quicker they are being cured and if they are not burned they are not satisfied. I used to yield to their demands, but now I do not. My injections now do not burn and although I do not proceed just as Dr. Kreissl does, I do use weak injections and give them frequently and regulate the amount used by the degree of acuteness of the disease.

The only place I use a strong injection is in the very early stages where the discharge is mucus or muco purulent and the microscopic examination shows that the gonococci are still on the outside of the cells. At this time you do have an opportunity to kill all the gonococci and abort the disease. Give the strong solution, repeat the next morning and in 15 to 25 per cent. of your cases you will obtain cure at once. If you do not cure your patient you will have done him slight harm. I usually put it up to the patient, whether they want to take the chance, and they usually are willing to take the risk.

A. N. Devault: It seems to be the consensus of opinion that the weak solution is the thing. Dr. Kreissl spoke of acute cases and they seem to be under discussion. Protargol, as Dr. Kreissl says, I know can be used with safety and to good purpose. I have used it in one-eighth to one-fourth strength but one thing must be remembered: the solutions are no good after a few days' use. I have yet to find a case where they will accomplish anything after the fifth day. After that, as you know, we still have gonococci. So, after I have used the argyrol for four or five days I use the astringent and for this purpose a combination of zinc and chloral iodine is one of the best that I have found. I have them use the argyrol as frequently as they can be persuaded to do so and then in five days begin the astringent and it will stop the progress of almost any case. I never use the two together except in the rare instances when a patient comes in, says he has just been infected, then if you use the astringent you will get along without further injections. So I wish to impress this fact, do not use the argyrol too long before beginning the astringent.

F. Baumann: As to the treatment of gonorrhea: It is not a question of drugs. It is the method of treatment. Every clinically active substance can be used if the doctor who uses it has a certain kind of scientific training. We are limited to the production of injury because medicines are not clinically active, and will, therefore, not reach the bacilli, so that the only thing we have before us is to take care of the patient himself, his resistance, so that the drugs have a chance to do their work. The resistance of the patient can be markedly increased or decreased by the habits by which he is surrounded.

As to the solutions: In this way we can also explain why solutions used in the urethra cannot be used on the outside, because they work not only as antiseptics, but as irritants. To demonstrate that clinical methods can be used I have used nitric acid and auric acid and got just as good results as I have from argyrol. I, too, use the solutions weak. I know that protargol is rational, but it is only rational from the manufacturer's standpoint!

About that beer test: that is entirely unsatisfactory and unscientific and I am much surprised that it should have been mentioned here to-night. It depends upon the location. You may have a membrane which secretes all the time.

The microscopic examination does not mean anything at all in gonorrhea. Nothing is easier than to get rid of the gonococci and have nothing but leukocytes after ten days and still the disease is not cured. I have treated as high as 34 cases in a day and I examine them microscopically and I have never succeeded in curing a case of gonorrhea in twenty days. If I get them out in two or three months pretty well cleaned up I am satisfied and think I have done well.

A. E. Bertling: If the treatment outlined by Dr. Kreissl has been shown not to be thoroughly efficient I think we must agree that it is the most rational that has been brought out up to the present time, although it is not new. Experience has shown that if it is carried out as Dr. Kreissl has suggested it does give certain good results.

There is only one point, probably, that I should consider of some importance which Dr. Kreissl might have mentioned. I believe that it is important to lessen by all means the congestion of the organ and for that reason I tell my patients to abstain from meats and highly seasoned food, liquors and all nitrogenous foods in a general way. I believe if we place our patients on a diet of buttermilk and water, then our local treatment will be much more efficient because everyone knows that even wet-dreams or the erection of the parts will cause a congestion which will be followed by an increase in the discharge from the urethra. Experiments carried on in Europe have demonstrated that by placing these patients on a strictly abstemious diet the treatment is greatly enhanced and they consider this of probably as much importance as any other measure.

H. A. Kraus: I must confess that I have not had these easy cases. When my patients come to me there is usually marked congestion with peri-urethral infiltration. I cannot tell my patients to take a syringe, go home and use it, because in the condition in which I find them that is very painful, in the first place; and in the second place these injections of argyrol stain the clothing, which is very obnoxious to the patient.

From my personal experience I know that argyrol will not cure as quickly as silver nitrate.

F. Kreissl (closing discussion): Owing to the lateness of the hour, it is impossible to reply to all the points brought out in the discussion. It seems to me that most of the gentlemen who disagree with my views and statements did not give my paper the proper attention, or else misunderstood the subject.

My remarks refer to the treatment of anterior gonorrheal urethritis in its earliest stage, and still uncomplicated. For the same reason I am not able to reply to Dr. Belfield's otherwise excellent remarks, since he was talking about complications, which are not included in my paper, and which as I said and know, can be avoided by my method of treatment.



The objection to the title "An Efficient Treatment" is inconsequential, you may call it rational if you please, but one thing is sure, in its results it is efficient.

It is sure that by this method, if methodically employed in the early stage of the disease, you will see all acute symptoms subside within twenty-four hours, and you will rarely, if ever, observe a complication.

If a patient cannot be induced to follow the instructions of his physician, you must not blame my method for the failure to cure. Such patients I should refuse to treat.

Neither is it the fault of the method that the patient with very acute inflammatory symptoms complains of the slight pain caused by the injection; this pain is certainly not greater than that caused by the urine passing over the inflamed urethra, and just in these cases the rapid subsidence of all these symptoms under this method of treatment will be appreciated.

The case Dr. Kraus refers to in which nitrate of silver had to be employed after protargol failed is simply a corroboration of my statement, that certain conditions like granulations appearing very early sometimes require silver nitrate applications.

The practitioner comes in contact with the early stage of acute gonorrheal urethritis much oftener than the specialist, and it is the purpose of this paper to put in his hands a method which will shorten the course of the disease, and change a trouble generally considered as very serious into a mild one. While in this way the financial return of each case might be smaller, yet this loss will be fully made up by the growth of the prestige and belief in the ability and skill of the physician.

#### CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

*Regular Meeting, Feb. 21, 1911*

The president, CHARLES ROBERTSON, presided at the meeting.

#### LANTERN DEMONSTRATIONS OF THE OPERATIONS FOR EXTERNAL NASAL DEFORMITIES

JOSEPH BECK, M.D.

Dr. Beck presented the subject of "Operations for External Nasal Deformities," by first presenting a case of a form of such conditions: Mr. J., aged 27 years, met with an accident five years ago by touching a live wire which caused marked destruction of his face and arms. The right arm was so markedly affected that amputation became necessary. The loss of tissue about the face consisted mostly of skin and subcutaneous connective tissue except the nose, in which the entire left alar cartilage was consumed, leaving the lesions (as shown in the diagram) unilateral deformity. This case has been of interest from another point of view, namely: the action of fibrolysin in softening the scars.

This remedy was administered in order to make the structures more pliable before operation so that perfect coaptation could be obtained. This result was clearly manifest by palpation, in that the scars became freely movable, but of much more interest was the microscopic study of scars removed from time to time during the administration of fibrolysin, which was positive in demonstrating the fluffing of scar connective tissue.

Another point of interest in connection with this case was the method proposed by Dr. Beck, for remedying the defect of left ala. The patient has a projection of the anterior septal cartilage which Dr. Beck intends to utilize to take the place of the missing ala, performing the operation at two different times, severing the projecting portion from the remaining portion of the septum only after it has become attached to the external wall of nostril.

The case was presented before operation so that the members would have the opportunity of comparing the result obtained from the plastic work with the condition found before operation.

Dr. Beck further demonstrated by means of lantern slides the various external nasal plasties, beginning with the Italian method, introduced by Togliocozzi in 1547 and ending by the most modern operations for external deformities by the intranasal route—altogether about fifty varieties of procedures were shown.

## SOME RAMBLING THOUGHTS CONCERNING THE SUBJECT OF RADICAL MASTOID OPERATIONS

DR. FRANK ALLPORT

*The Incision.*—The incision is long and curved over the auricle. The mastoid tip is freed from the tendinous tissue by curved scissors, the periosteum is pushed back, the cartilaginous and osseous meati are separated by a spatula, a gauze strip is passed through the meatus to hold the cartilaginous meatus out of the way, and then the self-retaining retractors are placed in position and screwed up to their widest expansion. Artery clamps are not used, the retractors stop all soft tissue hemorrhage. One pair of retractors is placed in the upper end of the wound and one pair in the lower. Unless the cerebellum or the backward course of the sinus are to be opened, no backward incision is necessary. A long incision and widely expended retractive supply an ample operative field. These retractors are far superior to hand retractors in every way.

*The Chiseling.*—Broad chisels should be used wherever possible. They are safer and quicker. The cortex should be shaved off until the interior of the bone is exposed, then we can proceed more surely. By care the sinus will not be opened, and if the primary bone chiseling does not extend higher than the roof of the meatus, the dura will not be exposed. After the cells are exposed it may be necessary to chisel higher, but higher chiseling should be discouraged until the cells are exposed. Peculiar bones are sometimes seen with backward shelving meati giving a wrong impression as to the location of the bones' contents. The margin of the meatus is thrown much too far backward, and if chiseling is begun here the sinus will probably be opened. These bones should be recognized, and chiseling should be based on the place where the meatal margin *should* be and not where it is.

The posterior wall of the bony meatus is chiseled down at the same time as the contiguous bone; it has to come down anyway and might as well come down at first as later, and it makes more room for operating. The outer one-third of the posterior meatal wall should be cut down so that there is nothing of it left, but much circumspection should be exercised in working upon the inner two-thirds, for inside of its bony structure passes the facial nerve. The inner portion of the meatus, or the "bridge" as it is sometimes called, can be best cut away by careful chiseling. The higher up we chisel, curette or bur, the less is the danger of hurting the facial nerve.

*The Use of the Bur.*—The bur is the best, quickest and safest method of cleaning out the interior of the bone and is especially useful in delicate and dangerous locations. Everybody should learn how to use it. All necrotic areas can be swiftly and safely removed by the bur, and it produces a beautiful, smooth, healthy cavity, unequaled by any other method.

*The Eustachian Tube.*—The tube should be thoroughly curetted, not forgetting the close relationship with the carotid artery. The points of curettes should always be directed forward and upward to avoid injury to the artery. Dr. Allport also uses round hand burs of different sizes to clean out the tube and frequently rims out the tympanic orifice of the tube with the electrically driven bur, but one should be an expert in handling the bur to do this. Not only should the granulating mucous membrane be removed but some of the bone at the orifice should also be removed in order to absolutely close up the tympanic orifice of the tube and prevent permanent tubal dripping, which presents the appearance of an uncured case. Sidney Yankauer's new tube curettes are useful instruments. Of course, all significant nose and throat complications should be relieved.

*The Flap.*—Dr. Allport still uses a modified Panse flap with the entire flap turned upward instead of one half up and the other half down, as recommended by Panse. In other words his lines of incision represent a letter L instead of letter T. He still uses the metal Michel sutures.

*The Dressings.*—He packs the cavity with gauze until its shape and outlines are established, which takes from two to three weeks. After this he completely fills the cavity at each dressing with powdered boric acid. His cases are usually, but not always of course, healed in from eight to ten weeks.

*The Heath Operation.*—Dr. Allport still believes that this operation is based upon unsound surgical principles and neither uses nor recommends it.

*Grafting.*—He rarely finds grafting necessary but if, in about three months, there are any unhealed areas, he inserts small thin shavings of skin. He has always been opposed to Dench's primary grafting on recently chiseled bone as it did not seem likely that grafts would adhere and live until some granulations had covered the bone. A recent visit to Dench's clinic, however, and a careful observance of his work and results have convinced him that his methods are admirable and well worthy of emulation.

#### DISCUSSION

Dr. Joseph C. Beck: As usual Dr. Allport has presented the subject in a masterful manner and many new points of interest have been brought out. There are, however, a few little points that might be mentioned that play an important rôle in the technic and healing process of the radical mastoid operation.

In the first place, Dr. Allport made no mention of the influence of the pathologic condition on the healing process. For example, where there is cholesteatomatous infiltration of bone the healing is much delayed. In the second place, Dr. Beck is in favor of more conservative treatment, particularly where there is suppuration in both ears and the radical procedure might cause the patient to lose the hearing in both. In this case, if in no other, the semi-radical procedure is indicated on one side, with the hope of leaving the patient more hearing.

Dr. Holinger: Dr. Beck drew our attention to the pathology of the condition for which we are most frequently called upon to perform radical mastoid operations, namely, the cholesteatoma. We know that the cholesteatoma matrix is nothing else but an epidermized scar, which took the place of destroyed lining of bone in the mastoid process. Every bit of this epidermis ought to be preserved because the epidermization of the whole cavity starts and progresses from these islands of epidermis. Dr. Holinger would like to caution against Dr. Allport's advice about drilling the bone with an electric bur until there is a cavity surrounded by smooth walls, because in so doing he can not help destroying the islands of epidermis so valuable for the shortening of the period of recovery. There is not even any advantage in this concerning the final result because the granulations which form will change the size and shape of the cavity so that we hardly can compare it to the original one.

Taking care of the Eustachian tube is another point where opinions differ. Dr. Allport and many other operators are certain that they always can produce a bony occlusion of the tube. Other equally trustworthy authors insist that this desideratum can only exceptionally be reached and that often a fistula remains which later on keeps the cavity moist. Add to this uncertainty of success the danger of injuring the top of the cochlea, which means destruction of a part or all of the remnants of hearing often so valuable to these patients, and you have the reasons for the fact that Dr. Holinger did not formerly nor will he in future, in treating the Eustachian tube, go beyond careful removal or cautery of granulations around the opening of the tube. Nevertheless he thinks he can favorably compare his results with those of Dr. Allport, as already in 1898 before the Chicago Medical Society he presented patients with perfectly dry and epidermized cavities six weeks after radical operation was performed. Dr. Allport speaks now of eight to ten weeks and another gentleman shortly before his presentation in 1898 had given the time of three to six months.



Dr. Boot stated that he wished to call the attention of the society to a point that he had mentioned before in this society, namely, that the facial nerve in infants emerges opposite the middle of the annulus tympanicus and is in great danger of being cut off if the incision is made as far downwards as is usual in adults.

Another point of importance in mastoid surgery is that great care should be used in curetting the upper posterior quadrant of the tympanum for fear of injuring the facial nerve, which is covered here by only a thin layer of bone and at times is not covered at all by bone. There is danger also of dislocating the stapes and thus opening up an avenue for infection to enter the labyrinth if one curettes in this region. Fortunately the stapes is partly protected by the overhanging facial ridge. It is best not to curette at all in this region.

When we remember that the carotid canal is separated from the tuba auditiva and from the tympanum by a layer of bone that is often no thicker than a sheet of paper we must congratulate Dr. Allport that he has never perforated the internal carotid artery in reaming out the tympanic orifice of the tuba auditiva by an electrically driven bur that is so powerful that he finds it necessary to hold it with both hands to keep it from wobbling. Dr. Boot is very much afraid that if Dr. Allport were to perforate the carotid and find it necessary to ligate that the circle of Willis would make more than one ligation necessary.

Dr. Shambaugh does not think that Dr. Allport emphasizes sufficiently the danger to the hearing in the radical mastoid. Where a person is forced to rely upon one ear for the hearing one must be very slow about doing a radical mastoid. Under these circumstances if conditions demanded an operative interference for relief Mr. Shambaugh would be inclined to stop short of a complete radical and relieve the conditions without cleaning out the tympanic cavity. He has recently been forced to operate upon a case where a cholesteatoma in the antrum, breaking through into the meatus produced so much pain and discomfort that an operation had to be done. The hearing in the opposite ear was practically gone and the patient relied upon the ear with the cholesteatoma for hearing. Under these circumstances the incomplete radical is preferable even although the patient may have annoyance from time to time from secretions.

Dr. Shambaugh can hardly justify the work which Dr. Allport does around the tympanic orifice of the Eustachian tube with the electric bur, etc. The internal carotid often makes a prominence in the tympanic cavity itself so that using the large bur at the orifice of the Eustachian tube, may easily break into the carotid even without entering the Eustachian tube. He does not hesitate to curette away granulations which occupy the tympanic orifice of the tube. No amount of work in the Eustachian tube can hope to eradicate the tubal cells which one frequently finds leading off into the bony structure.

Dr. Shambaugh does not understand clearly Dr. Allport's method of placing the floor of the meatus and the tip of the mastoid on the same plane. There must always be a decided ridge left between tympanic cavity and the depth of the mastoid, because the facial nerve, which is on a level with the inner wall of the tympanum in the region of the oval window, comes out more and more along the posterior wall of the canal on its way to the stylo mastoid foramen.

#### GREENE COUNTY.

The Greene County Medical Society held its regular meeting in Kane, Friday, March 10, 1911. The meeting was called to order at the Masonic Hall at 1:30 p. m., with President Day in the chair. Drs. McLaren and Foreman were appointed censors pro tem. The minutes of the previous meeting were read and approved.

Members present: Drs. J. W. Ross, Jas. Squires, Carrollton; E. G. Proctor, C. B. Foreman, E. W. Fenity, Kane; W. C. Day, H. W. Chapman, F. N. McLaren, E. K. Shirley and H. A. Chapin, White Hall. Visitors present were: C. E. Black,

Jacksonville; H. W. Hand, L. O. Fresh, White Hall; A. K. Vanhorn, H. R. Gledhill, M. Titterington, H. R. Bohannon and Grimes of Jerseyville.

Resolutions adopted by the Williamson County Medical Society, relative to medical education and medical schools, were read and discussed at length. On motion of Dr. Ross action on the same was deferred until Dr. Black's paper was read. Dr. Black then read a paper on "Medical Education from the Standpoint of the Patient," giving in a very concise and interesting form suggestions as to needed reforms in our medical schools. The paper brought forth interesting and spirited discussion, after which, on motion of Dr. H. W. Chapman, the following resolutions were adopted:

WHEREAS, There are in Illinois a number of medical schools which are not qualified to impart a medical education, and are consequently a menace to the public; therefore, be it -

*Resolved*, That we respectfully request our legislature and governor to adopt such laws or measures as will give to the state only high-class medical schools.

WHEREAS, Great injustice is done to the cause of medical education, the care of the sick and the members of the duly licensed medical profession by the several standards of medical licensure now in existence; therefore, be it

*Resolved*, That we ask our legislature and governor to establish and maintain one educational standard and one medical examination, except in therapeutics, for all who are licensed to treat human diseases.

*Resolved*, That the Greene County Medical Society hereby heartily endorses the work done and the standards of medical education adopted by the Council on Medical Education of the American Medical Association.

*Resolved*, That a copy of these resolutions be sent to Governor Deneen, to our state senator and to each representative from this district; also to the Council on Medical Education of the American Medical Association.

H. A. Chapin was elected delegate and H. W. Chapman alternate delegate to the State meeting to be held in Aurora May 16, 17 and 18.

Question of fees for life insurance examinations was brought up by Dr. McLaren, who moved that the fee table of the physicians of the county society should specify examinations for old line life insurance companies, \$5.00; for assessment companies, \$3.00, and fraternal companies, \$2.00. Motion was unanimously carried.

The censors reported unfavorably on application of Dr. Kincaid for membership. Next place of meeting is White Hall, second Friday in June. Drs. W. C. Day and A. W. Foreman, of White Hall; E. G. Proctor, of Kane, and J. W. Adams, of Carrollton, essayists. After which the meeting adjourned.

H. A. CHAPIN, Secretary.

## MADISON COUNTY

One of the best meetings of this society was held in Edwardsville on the afternoon of April 7, 1911. Dr. J. L. Greene, alienist of the Board of Administration presented the subject of "The State Care of the Insane." The paper was full of valuable information and presented details of the most advanced methods of treatment as carried out by our state authorities. The value of the early diagnosis of insanity was dwelt upon as was also the great value of early treatment of this disorder. Dr. Eugene Cohn, formerly a member of this society, but now assistant superintendent of the Peoria State Hospital, opened the discussion and materially increased the interest of all present in this very important subject.

The subject of the next paper was "Some Feeble-Minded Problems," by Dr. H. G. Hardt, Superintendent of the Institution for Feeble-Minded, at Lincoln, and it was presented in an interesting manner much to the delight and edification of the members. The discussion led by Dr. W. H. C. Smith became general and developed a great deal of useful knowledge. All the papers and discussions were highly appreciated by our members and a rising vote of thanks was tendered to our essayists. The death of Dr. T. L. Foulds, of Alton, being announced, the chair appointed a committee on resolutions consisting of Drs. Pfeifferberger, Riley and Fiegenbaum, all of Alton. Besides our honored guests mentioned above the following were present: Members—Drs. Hirsch, Hastings, Wedig, Riley, Johnson, Beard, Wahl, Pfeifferberger, Sims, Yerkes, Wilkinson, Schreifels, Kes-

singer; McKinney, Lemen, Oliver, Merwin, Sutter, Smith, Tulley, J. H. Fiegenbaum, Kerehner, Molden, Robinson, Wharff, Vogt, Braner, Ferguson, Barnsback, Taphorn and E. W. Fiegenbaum. Visitors: Dr. C. W. Lillie, of East St. Louis; Dr. W. C. Phipps, of Maryville; Dr. Thos. C. Marion, of Worden; Drs. Corbett and Weidman, Rev. J. W. McNeil and trained nurse, Mrs. T. E. Amos, of Edwardsville.

The next meeting will be held at Collinsville on May 5, and the subject for the day will be, "Cholera Infantum, and Allied Conditions."

This society is growing in membership and usefulness, and it will not be long until every eligible physician in the county will become a member. The experiment of changing from quarterly to monthly meetings has been highly successful, as we now have a larger attendance than we formerly had at our quarterly meetings.

E. W. FIEGENBAUM, Secretary.

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### MASSAC COUNTY

The annual meeting of the Massac County Medical Society was held Jan. 12, 1911, in the club rooms in City National Bank Bldg., Metropolis, Ill. The following officers were elected for the year; Dr. A. E. Miller, president; Dr. J. A. Helms, vice-president; Dr. G. B. Bormann, secretary; Dr. J. A. Orr, treasurer; Dr. G. W. Walbright, was elected as delegate. The following were appointed as board of censors: Dr. R. H. Jacobs and Dr. G. W. Walbright, Dr. J. A. Helms was appointed as member of medico-legal committee.

Dr. C. E. Trovillion gave a short illustrated talk on "Tinea Sycosis," which brought on a general discussion by all present, as to differentiation, diagnosis and treatment.

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### MORGAN COUNTY

#### *Special Meeting, March 31, 1911*

March 31, 1911, the society met in special session to hear the report of Dr. Adolph Gehrman of the Columbus Laboratories, Chicago, who had been secured to make a sanitary inspection of the new source of water supply for Jacksonville from their wells north of the city. After reading his report, a number of the members discussed the situation and Dr. Reid moved that the report of the committee embodying the report of Dr. Gehrman be accepted and filed, that the committee be continued and requested to have applied, if possible, certain tests advised by Dr. Gehrman in order to determine positively whether the Widenham-Daub wells are readily susceptible to contamination from the highly contaminated surface surrounding the wells. Seconded by Dr. McLaughlin, carried unanimously.

A. R. GREGORY, JR., Secretary.

#### *Regular Meeting, April 13, 1911*

The Morgan County Medical Society held its regular meeting April 13, at the Public Library, Jacksonville, Illinois, with President Woltman in the chair. The following members were present: Drs. Black, King, Ogram, Cole, Bowe, Woltman, Stacy, J. U. Day, Duncan, Hardesty, Norris, Hairgrove, Campbell, McLaughlin, Reid and Gregory.

Dr. Samuel D. Anderson of Concord, was unanimously elected to membership.

Dr. Black called attention to the new x-ray which was lately installed at Passavant Hospital by the Scheidel Western X-ray Company of Chicago.

Dr. McLaughlin reported a very interesting case of *ascaris lumbricoides*.

"About the seventh of February a boy was admitted to the hospital of the School for the Deaf. History of asthma since infancy. The child was in the hospital only a few hours when his temperature began to rise. History of cough. Had a secondary pneumonia of the right lung, temperature running 105, pulse 144, respiration 40. This child was physically below par and apparently mentally deficient. Crisis came in the night of the fifth day. During the fifth



day very decided amount of mucous coughed up. The child being dull and not being teachable, at once swallowed everything that came into the mouth. The temperature during the next twenty-four hours was 99, 100 in the evening with pulse of 108 or 110. Then temperature came up again with considerable distention of the abdomen. During the course of the pneumonic attack I gave a few doses of creosotal. During this attack of pneumonia the wrretchings of vomiting were present more than I have been in the habit of seeing. Just after temperature had dropped to 99 degrees, a few hours afterward, nurse noticed something hanging out of the child's mouth, put a towel over it and withdrew a lumbricoid. There was an acute intestinal poisoning. In five or six days the intestinal toxemia subsided. In order to guard in the future against this, I put the child on acetozone. In about 36 hours the child became acutely nauseated and in one of the wrretchings following the attacks of vomiting, he got up three lumbricoids. I put the child on santonin and calomel followed in the morning by salts and after with one-half ounce of oil. When I started the salts the child within a few hours went into spasms. These spasms were continuous over most of the twenty-four hours. The next day I continued the treatment. At the end of the second treatment the spasms increased to such a degree of severity that I was forced to control them with ten grains of chloral. The spasms became very severe and in the interim between the paroxysms he had a paralysis of the right arm and right leg. The secretory functions of the skin were diminished slightly. The third attack of paralysis and intestinal toxemia called for heroic measures and I decided to give 12 grains of santonin in divided doses of 4 grains each followed in morning with  $\frac{1}{2}$  ounce of salts. Chloral was needed to control spasms. Condition was extreme, pulse 140, irregular respiration, but notwithstanding this I felt that I must repeat the dosage, so I gave mercury followed with salts in large doses. It came to my mind that this mass must have come from childhood or infancy and possibly amounted to several hundred lumbricoids and if this number of dead were wrapped in a wall there and not passable to the upper or lower bowel, the result would be a soluble material which would be digested and toxemia would take the life of our patient. In order to prevent this I began the use of acetozone and have used it ever since. We have taken about seventy-five worms of full length. Sometimes there would be two or three worms and five to 100 pieces of worms. The child had hovered on the border of very extreme toxemia until possibly ten days ago. Now only every two or three days we get a worm in sections and sometimes the skin of the worm without the worm. I have been giving the acetozone and each night a grain of chloral and salts in the morning or oil. The child is improving. About four weeks ago whooping cough came into the institution and he had it, but is getting along nicely. During the whole attack the patient has had an accompanying nephritis.

The paper of the evening, "The Study of Pathology of the Living," was read by Dr. Edward Bowe, who said in part:

#### THE STUDY OF PATHOLOGY OF THE LIVING

EDWARD BOWE, M.D.

The diagnosis and treatment of a diseased condition based upon empiricism must necessarily be inaccurate. The well recognized fact that a group of well defined symptoms frequently met with in disease may be attributed to widely varying pathologic or disturbed physiologic functions has been the real stimulus in the development of the diagnostic methods of modern medicine and surgery. Since the publication of the essays of Morgagni of Padua in 1761, in which he attempted to give a very complete picture of morbid processes by carefully comparing the clinical aspects of disease with the anatomical findings, in a large number of cases the symptomatology, diagnosis, prognosis and treatment of disease by the medical profession has been largely if not wholly based upon pathologic basis.

While post-mortem study of tissue changes produced by disease affords a basis upon which we formed our opinion as to the probable pathologic process that is causing a single symptom or a symptom complex in the living subject whose history and symptomatology may correspond wholly or in a degree with those in a subject in whom a disease has been diagnosed or a diagnosis confirmed by post-mortem study; yet there is much to be learned by study in the living subject that not only furnishes us with an accurate pathologic basis upon which to found our opinions clearly and definitely as to the symptomatology, diagnosis, prognosis and treatment but also furnishes us with the personal equation physiologically and pathologically and that must be studied as a personal entity along these lines in every patient.

The position occupied by modern surgery as compared with internal medicine in a marked degree emphasizes the foregoing statements. While the development of asepsis, antisepsis and improved surgical technic has contributed much to this prestige, yet the great determining factor in the process of evolution has been the zeal and accuracy with which surgeons have pursued pathologic study both post-mortem and in the living subject and the application of their findings and conclusions to the practice of their special line.

The degree of reasonable assurance that prevails in surgical diagnosis and operative surgery is the natural product that pathologically can only be produced in a lasting form by material experience and observation. While this line of study has been of immeasurable value, yet it has not been without its disadvantages. Unfortunately with those surgeons of limited training, experience and ability in attempting to imitate or follow in the footsteps of those who were properly qualified. The practice of surgery in such hands resembles a calling more closely related to the mechanical arts than that of a profession dealing with a complex highly organized living body that should in each and every case be studied as an individual entity, anatomically, physiologically and pathologically.

The same condition in a marked degree prevails at present as applied to internal medicine. The failure to recognize that diagnosis is the cornerstone of medicine and surgery, and that diagnosis to be reasonably accurate and certain must be based upon study along the lines we are here considering and that dependence upon specific remedies directed toward symptomatology alone is not only uncertain but also a serious handicap to both preventive and scientific medicine is unfortunately too prevalent in the present-day practice of internal medicine.

In this brief paper it will be attempted to emphasize the value in each case of having a definite idea and mental picture of the pathologic process of the clinical findings as they confront us in daily practice.

Because of the opportunities offered for immediate observation and study of pathologic lesions in the living subject we begin with the field of operative surgery in its various fields. In many cases the operating surgeon is able to subject to visual inspection and palpation the lesion responsible for the symptomatology toward which he is directing his treatment, and from such findings and operative technic he is in most cases able to give a definite prognosis regarding the immediate and remote possibilities of his patient. He also considers well any existing impairment of physiologic function or any such disturbance that might result from the surgical procedure in hand, and without such a definite mental picture constantly before him, a surgeon's operative procedure is mere experimentation and an injustice to a great and learned calling.

I will venture the statement that a great majority of surgeons will say that the lessons in pathology learned at the operating table while dealing with the living subject have been their most valuable asset in diagnosis, prognosis and treatment in their future practice. Let us presume that it were possible for the internist to be as familiar with the pathologic conditions that are responsible for the various pulmonary diseases as is the surgeon with the various conditions found in the different manifestations of the various intra-abdominal lesions. Compare side by side the method of reasoning employed by the average internist

in the various types and stages of pneumonia, with those of the competent surgeon in dealing with a case of appendicitis.

While here there is no attempt to cast discredit upon or belittle the work of the body of men in internal medicine who are in the front in the establishment of scientific medicine and surgery, yet we must all admit that the old tradition of a practice based upon symptomatology and a dependence upon specific remedies is still with us and too slow in departing

#### DISCUSSION

Dr. Carl E. Black: It is very interesting to go over the steps which have lead us to a better understanding of the pathologic conditions as they have developed out of operative observation. We should organize our opportunities in this community for pathologic observations and study our cases together. We have several hundred cases every year in Jacksonville where the abdomen for example is opened. If we would organize that work every physician in the community should have the opportunity of observing those conditions. Most perplexing conditions arise regarding diagnosis of cases. One of the most interesting and instructive illustrations of the value of pathology of the living is found in duodenal ulcer. I believe it should be a fixed principle in the mind of every doctor that a patient that has a definite group of symptoms has some place a definite pathology and it is our duty to find it.

Drs. Woltman, Stacy and Hairgrove also took part in the discussion, after which the society adjourned.

#### PEORIA COUNTY

The Peoria City Medical Society met Feb. 21, 1911, with president Dr. A. L. Corcoran in the chair and a good representation of the membership present. Drs. Collins and Weber reported a case of Renal Calculus, showing skiagraphs, and illustrating the advantage of having the x-ray plates before the surgeon during the operation. Dr. J. H. Bacon read a paper on "Mental Deficiencies, Aside from Mental Disease." Dr. Geo. Michell led in the discussion, and Prof. Packard of the Bradley Politechnic took part.

#### *Regular Meeting, March 7, 1911*

On this date the society enjoyed a deviation from the usual scientific program, listening with interest to the following:

#### BUSINESS SYMPOSIUM

'Sane and practical investments for the physician.

Real Estate .....	Att'y W. W. Hammond
Life Insurance .....	Chas. A. Macauley
Building & Loan.....	J. C. Rambo
Mortgage Loans .....	Walter A. Causey

These men are leaders in their separate lines, and much reliable legitimate information was imparted.

Resolutions were adopted endorsing the appropriation by the state of \$100,000 per year for furthering the interests of the Medical Department of the State University.

#### MEDICAL BANQUET

On March 15 occurred the annual banquet of the society. About 100 physicians and dentists and their wives enjoyed a \$2.50 per plate dinner, and the following toasts:

President's Address .....	Dr. A. L. Corcoran
The Relation of the Physician and Dentist to their Profession and to the Community .....	Dr. A. C. Cotton, Chicago
Vocal Solo .....	Mrs. W. C. Williams



Ideals .....Mrs. Clifford U. Collins  
 Legislation and the Practice of Medicine.....Senator John Dailey  
 Our Professional Relations .....Dr. W. A. Johnston, Dentist  
 A social time followed.

*Regular Meeting, March 21, 1911*

At the second semi-monthly meeting of March the pending osteopathic bill was given careful consideration, and a committee appointed to confer with the senator and representatives from this district. The committee consists of Drs. Kerr, Collins and Farnum. Committee on medical inspection of schools reported that active measures are under way to inaugurate a system of inspection. Dr. Bacon moved that this society invite the state society to meet in Peoria in 1912. Dr. Wm. B. Eicher was the essayist of the evening, and read a paper on "A Study of the Value of Psychic Influences."

*Regular Meeting, April 4, 1911*

At the regular meeting of April 4, Dr. E. S. Judd, of Rochester, Minn., read a paper on the subject "Post-Operative Ventral Hernia, and Plastic Abdominal Closures." An informal dinner was arranged by Drs. Hanna and Collins at the Creve Coeur Club for 6 p. m.; it was well attended by the profession.

E. W. OLIVER, Secretary.

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### JACKSON COUNTY

The April meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club at Murphysboro, Ill., April 20, 1911: present, Drs. Horstman, Molz, Grizzell, Ormsby, Sabine and Essick, of Murphysboro; Dr. Mitchell of Carbondale; Dr. Estel of Jacob. Visitors: Dr. Gault of Sparta; Dr. J. W. Pettit, Ottawa.

Program: Dr. J. W. Pettit, of the Ottawa Tent Colony, read a very excellent paper entitled "The Early Diagnosis of Tuberculosis and How to Make it." Discussion, Drs. Mitchell, Molz, Horstman, Grizzell, Gault. Dr. C. O. Molz of Murphysboro presented a case of fracture of the elbow and also a case of partial paralysis of the vocal cords

Adjourned.

RAY B. ESSICK, Secretary.

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### STARK COUNTY

The Stark County Medical Society met in the City Hall, Toulon, April 11, 1911. Dr. M. T. Ward, Toulon, was elected president; Dr. R. L. Buffum, Toulon, was elected secretary. Dr. Finley, of Galesburg, gave a very good talk on "Drainage."

R. L. BUFFUM, Secretary.

## NEWS OF THE STATE

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### NEWS

- Dr. C. E. Peel and family have removed to Decatur.
- Dr. G. H. Henry has removed from Robinson to Oblong, Ill.
- Dr. George E. Pope of Niantic is preparing to move to Canada.
- Dr. W. M. Hartman has removed from Good Hope to Macomb.
- Dr. J. M. G. Carter of Chicago has removed to Los Angeles, Cal.
- Dr. Hyman Brunswick of Pittsfield has returned from Hot Springs, Ark.
- Dr. W. S. Taylor and family of Tallula will move to Berlin in a few days.
- Dr. Edward P. Bartlett of Springfield retires from practice because of ill health.
- The offices of Drs. Bradway of Abingdon, Ill., were destroyed by fire March 11, 1911. The loss is about \$1,000.
- Dr. W. H. C. Smith and family of Godfrey have returned from the south where they have spent the last two months.
- Kenyon Elder, the 14-year-old son of Dr. and Mrs. Elder, died March 9, 1911, at his home in Franklin, Ill., of diphtheria.
- Dr. and Mrs. J. H. Barber of Pittsfield have returned from St. Petersburg, Fla., where they have been spending the winter.
- The Physicians Furniture Exchange has removed to 121 N. Wabash Avenue. Increase of business demanded an enlarged floor space.
- Dr. A. J. Foster has sold his residence in Peoria to Dr. W. T. Dowdall and moved to Segura, La., where he will practice medicine.
- Dr. H. W. Long of Elmwood has announced his candidacy for the office of supreme medical examiner of the Mystic Workers of the World.
- Dr. C. B. Reed, Chicago, has started a crusade of extermination against the alley cat, and has enlisted the Health Department in the project.
- Dr. L. Harrison Mettler announces the removal of his office to the Columbus Memorial Building, the new number of which is 31 North State Street, Chicago.
- A \$16,000 addition will be made to St. Francis Hospital at Litchfield, this season. The new addition will be on the south of the present building, full three stories high.
- The Lutheran Hospital at Granite City has been declared bankrupt, the affair involving a large amount of money, and is said to have been caused by the failure of patients to pay bills.
- The Waukegan Physicians Club has made a liberal contribution to Dr. Margaret S. Grant, who leaves in the early summer for China, where she intends to make an exhaustive study of the pneumonic plague.

On the morning of March 27, the office and drugstore of Dr. Joseph Pogue of Edwardsville was destroyed by fire. All the valuable records accumulated during a practice of fifty years together with a complete up-to-date surgical outfit, x-ray machine, electrical appliances, medical library and drug stock became a total loss, only partially covered by insurance.

—For the benefit of people living in and working near the loop the Chicago Memorial Tuberculosis Sanatorium has opened a down-town dispensary at the Iroquois Memorial Hospital, Market Street, for the free examination and treatment of persons suspected of having or are actually affected with tuberculosis. The dispensary at present is opened on Tuesday evening from 7 to 9 and on Saturday from 2 to 4.

—Dr. J. F. Snyder's large museum of archeological and natural history specimens, the most valuable private collection in the state, has been sold to William J. Seever of St. Louis, and will be replaced in the Archeological Institute in that city. The collection was known to all scientific circles throughout the United States and was the basis of many archeological papers appearing in leading scientific journals. It was valued at \$10,000 and has been the show place of Virginia for the past thirty-five years.

—THE DRS. SENN BRING SUIT AGAINST ST. JOSEPH'S HOSPITAL.—Emanuel J. and William N. Senn have filed petition in the Superior Court of Cook County, making certain charges regarding the use of two beds endowed by their father, the late Dr. Nicholas Senn. Dr. Senn ten years ago paid the sisters \$10,000, the endowment agreement affirming that the sisters should set aside for perpetual use of said Nicholas Senn, his regular heirs, and such other persons as he from time to time designated, these beds. The agreement was continued and recognized as proper up to Jan. 1, 1911. The sisters now in charge wrote the following letter to the Senn brothers, which has brought the matter to a focus:

Dear Sirs:—Since taking charge of St. Joseph's Hospital as Sister Superior I have been familiarizing myself with its affairs and I find that during the life time of your father, Dr. Nicholas Senn, he entered into two contracts with St. Joseph's Hospital concerning the perpetual use of two rooms therein for himself, his legal heirs, and such other persons as he might from time to time designate in writing, but the contracts do not give his heirs the privilege of designating who may occupy such rooms.

It is therefore my duty to advise you that the patients who are now occupying the Senn rooms at the request of your family, are not included in the class of patients entitled to occupy the rooms under the terms of the above mentioned contracts.

Yours respectfully,

SISTER CAMILLA.

According to the letter of the contract these beds must remain idle except when either of the brothers is inclined to occupy the rooms. The sisters insist that this would be improvident and that the hospital should have whatever income may be derived from use of the beds.

—The Morgan County Dental Society met at Jacksonville, April 6, 1911, with Dr. Green Vardiman Black, now of Chicago, but for many years a Jacksonville resident, as their honored guest. While the gather-



ing was primarily for the dentists of this and neighboring counties, added importance was given the event by the presence of Dr. Noyes of Chicago and Dr. E. R. Wedelsteadt of St. Paul, Minn. In the afternoon a meeting was held at 349 East State Street, the house where Dr. Black had his home for nearly thirty years and his offices for a long period. After a social hour, Dr. G. V. Black began an informal lecture illustrated with stereopticon views on "The Formation of Calculi," which proved to be of exceptional interest and aid to his auditors, presenting as he did many matters entirely new to them. At 8 o'clock a company of eighty sat down to the banquet tables arranged in the dining-room of the Dunlap. Beside dentists and physicians the business and professional men of Jacksonville were well represented. The toastmaster of the evening was Dr. E. K. Blair, and after the excellent banquet had been served the following speakers were introduced and made eloquent response: Dr. T. W. Pritchett, "The Fraternal Spirit"; Dr. G. H. Kopperl, "Our Guest of Honor"; Dr. T. J. Pitner, "The Medical Profession"; Dr. J. W. Hairgrove, "Surgery—Past, Present and Future"; Dr. E. R. Wedelsteadt, "A Voice from the G. V. Black Club of St. Paul, Minnesota"; Dr. A. B. Morey, "As We Knew Him"; Dr. G. V. Black, "Home Again." An added feature of the program was furnished by Dr. Carl E. Black, who with the aid of the stereopticon, displayed a number of pictures, giving something of the personal history of his eminent father and some idea of the development of his work.

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### NEW INCORPORATIONS

—American Cancer Research Society, Chicago; to establish laboratories for the study of cancer; incorporators, L. D. Rogers, Lyman W. Rogers, Charles F. Hall.

—West Suburban Hospital Association, Oak Park; capital \$25,000; maintain and operate a hospital; incorporators, W. E. Potter, F. W. Kettlestrings, Charles E. Humiston.

—Logan Square Hospital, Chicago; capital \$2,500; incorporators, Frank F. Hoffman, Jacob C. Krafft, Robert E. Gentzel.

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### PUBLIC HEALTH

—It is right and proper to foster and protect tree life and plant life; but let us not forget human life.—*From the Bulletin, Chicago Department of Health.*

—The superintendent of the Municipal Tuberculosis Sanitarium asks that the following announcement be made:

For the benefit of persons working or living in or near the loop district the Chicago Municipal Tuberculosis Sanitarium has opened a downtown dispensary at the Iroquois Memorial Hospital, 87 Market Street. This is for free examination and treatment of persons suspected of having or actually afflicted with tuberculosis. At present the dispensary is open on Tuesday evenings, 7 to 9, and Saturday afternoons, 2 to 4, but as

soon as attendance requires it the following hours will be observed: Mondays, 9 to 11 a. m.; Tuesdays, 7 to 9 p. m.; Fridays, 7 to 9 p. m.; Saturdays, 2 to 4 p. m.—*From Bulletin, Chicago Department of Health.*

—The Department of Health laboratories, on the seventh floor of the new City Hall, Washington Street side, are now in working order. In arrangement, appointments and equipment they no doubt are unequaled—certainly not excelled—by any municipal laboratories in the country. Separate rooms, each splendidly equipped, are provided for the different branches of laboratory work. The chemical laboratories for the chemical examinations of milk, water, foodstuffs and general chemical work are in every way up to the latest standard of laboratory construction. The bacteriological division is also perfect in every detail, and with the best of facilities for taking care of bacteriological work coming within the province of a municipal laboratory to do.—*From Bulletin, Chicago Department of Health.*

—Condemnation of the public drinking cup is strenuously voiced in the *Bulletin* of the Chicago health department of April 22. In the last two weeks, it is stated, the laboratory has been engaged in the examination of these utensils taken from public schools, downtown hotels, railroad stations, department stores and a home for children. In eighteen instances pavement epithelium, the cells which form the lining of the mouth, were found adhering to the lip of the cup; diphtheria-like organisms were found in two instances; influenza bacilli in two instances; pneumococci were demonstrated six times; streptococci, five times; staphylococci, fifteen times, and micrococci catarrhalis, once.

Of several guinea-pigs inoculated with the germs from the rim of the cups, five developed abscesses, six became extremely ill and two died, one with pus infection and one with typical diphtheria.

One result of the crusade against the public drinking cup was made public when a State Street department store announced that it had abolished the public cups at the fountains in its store, and that individual drinking cups would hereafter be provided for all patrons.

—If the people of Chicago only thoroughly understood the dangers to which they are exposed by the use of impure, dirty and infected milk they would certainly unite in a vigorous demand that the most extreme measures be taken for their protection. When we know that the germs of consumption are concealed in all dairy products that come from tuberculous cows we should certainly demand that all such products be condemned as unfit for use as food.

We would not permit the baker to put strychnin or any other poisonous substance in his bread. Neither should we permit the dairyman to poison his milk. Moreover, if the bakers of Chicago have been compelled to build and maintain clean, sanitary bakeries, why should not the dairymen be compelled to instal and maintain the highest standards of sanitation in the production of milk?

This question of clean, safe milk is of vital importance to the people of Chicago. It rises far above the question of dollars and cents. It can be settled in but one way, and that is that the producers and handlers

of milk must meet all the requirements that are shown to be necessary for the proper safeguarding of the public health.—*From Bulletin, Chicago Department of Health.*

—The Quadrennial Report of the Chicago Department of Health just issued covers the administration of the department by Dr. W. A. Evans as commissioner of health. In addition to the usual record of the activities of the department it contains full descriptions of the methods used and may be termed a hand book of health administration. It also has a series of articles by the commissioner on various features of health work. A full set of cuts of the posters, diagrams, spot maps and other educational features that have formed such a striking part of Dr. Evans' work is included. Carrying out the hand book idea it also has an index for ready reference. Many of the "healthgrams" that have appeared from time to time in the *Bulletin* are inserted.

The *Bulletin* of April 15 contained the following valedictory of Dr. Evans:

"TO THE PUBLIC

"When, in 1907, I assumed responsibility for the Health Department, I wrote that the work had been evolving; my predecessors had brought it up to a certain point and that I would try to build still further. I think that the reputation of the Department throughout the world, the growth of the older activities of the Department and development of new activities, the greater security of the people and a better food and air supply, and a greater public interest in health, are further steps in that evolution. Perhaps most significant of all, the Department is incorporated as, and in truth is, a school of sanitary instruction. Here, too, there is evolution, since the nucleus of it was this bulletin, begun by Drs. Reynolds and Reilly. I am steadfast in the hope and I assure the public of my belief that my successor will continue this evolution, fighting off the few in the interest of the great, needful mass.

"And now I wish to say in sincerity that the results accomplished have been due to the brains, energy and faith of the men in charge of bureaus, and the men and women under them; to the vision and the courage of the mayor; to the cooperation of other departments of the city government; to the city council, which has passed every important ordinance asked of it, save one—that requiring that milk should be kept cold.

"And, finally, I join with the community in wishing the incoming commissioner of health large results from his labors.

"W. A. EVANS."

—Universal recognition of conditions that are bad, as a rule, leads to their being made better. A few persons in a community may agitate and rail against evils that need correcting, but it is not until there is an aroused and practically unanimous public sentiment against them that real reform and betterment become accomplished facts.

So, if people generally realized the tremendous cost put on them by the communicable diseases, there would speedily be more intelligent and aggressive cooperation on their part with health officials in controlling and preventing epidemics of every kind.



Everyone knows that, aside from all other considerations, sickness is expensive and a terrible drain on his financial resources. But because this knowledge has not as yet crystallized into a sweeping public sentiment, or conviction, we might say, health laws and regulations are not appreciated at their full value and are not obeyed in the spirit that would make them of greatest value to the community. Here are some figures that will help us to better understand the cost of contagion. It has been estimated that the average case cost of the principal communicable diseases is as follows: diphtheria, \$200 to \$500; scarlet fever, \$250 to \$2,000; whooping cough, \$150 to \$1,000; measles, \$100 to \$500. Taking the minimum figures, let us see what the people of Chicago were compelled to pay for the four principal contagious diseases in 1910.

Diphtheria cases.....	7,961	@	\$200	—	\$1,592,200
Scarlet fever .....	6,427	@	250	—	1,606,750
Measles .....	10,920	@	100	—	1,092,000
Whooping cough .....	2,552	@	150	—	382,800
Total.....					\$4,673,750

The figures used are for average case cost from onset to termination of the disease, including the average, also covering recovery or death as the final outcome. The maximum figures are, no doubt, intended to apply to cases where the families are in good circumstances and are lavish, even reckless in the money spent for both the comfort and care of the sick.

It is, however, certain that the figures representing minimum cost are conservative and approximately represent the actual money cost to the people of Chicago on account of the communicable diseases named. It might be added that if only 10 per cent. of this \$4,673,750 could be had with which to fight contagion and to carry on a city-wide campaign of education and preventive work it would doubtless prove to be a most profitable investment both from the health and economic standpoints.—*From Bulletin, Chicago Department of Health.*

—The series of consumption articles is concluded with this contribution, which is much the least important of the series.

What are the conditions of the human body which make it easy to catch consumption? This is a question about which we know very little and about which we can say very little in an affirmative way. There are, however, certain negative things which should be said, viz.: A man is susceptible to disease if he is liable to "catch" it when brought in contact with the germ of that disease. A man is immune when he can come in contact with the germ of a disease and not "catch" the disease.

For many diseases we know all about the factors which make for immunity on the one hand and susceptibility on the other. With respect to consumption we know very little. For instance, a physical giant coming down with consumption is not a rare sight. Good, robust health does not prevent it; probably it even does not make against it. Invalids are no more susceptible to it than other people. Perhaps they are less so. There seems to be no relation between consumption and other diseases.

When you are recovering from one disease you are no more liable to contract consumption than at any other time. Perhaps you may be less liable, inasmuch as you are likely to be spending your time more out of doors in the sunshine and pure air and less in contact with diseased people and bad places. Being "weak" and "run down" does not predispose to consumption. The man who is "weak" and "run down" and who finds that he has consumption, is in that debilitated condition because of his consumption—the consumption is not the result of his condition.

No other disease "runs into consumption." When a man thinks that his typhoid or his pneumonia has "run into consumption" he is wrong. He had consumption from the start but was slow in finding it out. Consumption starts a long time before a man coughs up sputum with the germs of the disease in it. A diagnosis made from the findings of tuberculosis bacilli in the sputum is a dangerously late diagnosis.

Consumption is not inherited. The little tendency to it which may be inherited is so slight that it may be easily overcome. Probably we inherit more of poor chest capacity—tendency to pigeon breast—than we do of consumption. Right living should easily overcome that.

Between the cradle and the grave every man can expect to breathe or swallow some living consumption germs. How can we be spared the disease? Here's the way:

1. Avoid careless consumptives.
2. Avoid food from consumptive animals.
3. Avoid dusty places.
4. Avoid foul air.
5. Avoid human "jams."
6. Live in the sunshine as much as possible.
7. Live in the fresh, blowing air as much as possible.
8. Unhouse yourself as much as possible.
9. Build up your resistance by dressing lightly, exposing yourself to cold, living in cold rooms—the reverse of coddling yourself. (This applies to children and adults up to the age of 60 years. Old men and women must lead more sheltered lives.)
10. Have yourself examined from time to time to discover latent or semi-latent disease.—*From Bulletin, Chicago Department of Health.*

### HEALTH HINTS

Good air means good work.

Educate the mother and save the child.

In saving the child you are saving the state.

Defective sanitation means a defective civilization.

The common drinking-cup is a common nuisance and should be abolished.

If anyone hands you a lemon, make lemonade of it. It is both healthful and pleasant to take.

Bad air and a high temperature in the schoolroom are certain to produce a low grade of scholarship in the pupils.

If factory or workshop surroundings are clean and healthful the output will most likely be large in quantity and high in quality.—*From Bulletin, Chicago Department of Health.*

## DEATHS

DR. JOHN HOLIN died at his home in Cowden March 18, 1911, from pneumonia, aged 65.

JOHN O'FARRALL, M.D., Cincinnati College of Medicine and Surgery, 1863; died at his home in Danville, Ill., March 7, from nephritis, aged 74.

GEORGE W. ANDREWS, M.D., Western Reserve University, Cleveland, Ohio, 1875; died at his home in Ramsey, Ill., March 10, from pneumonia, aged 59.

NORMAN O. GREER, M.D., St. Louis College of Physicians and Surgeons, 1904; of Dupo, Ill.; died in a hospital in St. Louis, March 30, after an operation for appendicitis, aged 38.

COLUMBUS V. MASSEY, M.D., American Medical College, Eclectic, St. Louis, 1878; a member of the American Medical Association; died at his home in Chicago, March 20, from heart disease, aged 62.

JOEL ALLEN (license years of practice, Illinois, 1877); surgeon of the Seventy-Seventh Illinois Volunteer Infantry during the Civil War; died at his home in Pontiac, March 9, from influenza, aged 83.

HARRISON ANDREW LYDING, M.D., Rush Medical College, 1910; of Chicago; an intern at Michael Reese Hospital; died in that institution, March 20, from scarlet fever contracted from a patient, aged 23.

THOMAS F. O'MALLEY, M.D., Rush Medical College, 1886; a member of the Illinois State Medical Society; who in his young manhood studied for the priesthood in Ireland but was never ordained; from 1892 to 1899 chief medical examiner of the Catholic Order of Foresters; died at his home in Chicago, March 19, from pneumonia, aged 50.

R. W. REASONER, M.D., for a number of years a practitioner of Morrisonville, was killed by a foot-pad at Colorado Springs, April 14, 1911. Dr. Reasoner went to Colorado Springs about ten years ago because of his wife's health, and remained practicing there up to the time of his death. It will be remembered Dr. Reasoner while practicing in Morrisonville was shot by an insane person, and narrowly escaped death. He is survived by a brother, who is a surgeon in the United States Army, and his father, of this state.

HENRY GRADLE, a pioneer ophthalmologist and otologist of Chicago, a lifelong student and scientist, died at his winter home in Santa Barbara, Cal., April 4, from carcinoma of the bladder, aged 55. He was born in Frankfort-on-the-Main, Germany, came to Chicago when a young child, and received his education there. He graduated from Chicago Medical College in the class of 1874, and at once began practice of his specialty. From 1879 to 1883 he was professor of physiology in his alma mater, and since 1898 has been professor of diseases of the eye and ear. His society membership included the American Medical Association, Heidelberg Ophthalmologic Society, Chicago Ophthalmological Society, and Chicago Laryngological Society. He was attending eye and ear surgeon to Wesley Hospital, and consulting eye and ear surgeon to Mercy Hospital. He was a frequent contributor to the periodicals dealing with his specialty. He was also the author of "Bacteria and the Germ Theory



of Disease," which appeared in 1883, and a "Text-Book on Diseases of the Nose, Pharynx and Ear," which was published eight years later.

FRANK ANTHONY, M.D., Rush Medical College, 1881; one of the most esteemed and best beloved practitioners of northern Illinois, died in Augustana Hospital, Chicago, April 8, from cirrhosis of the liver, aged 53. After his graduation Dr. Anthony returned to his home city, Sterling, where he practiced with his father and later succeeded to his practice. He was a member of the American Medical Association, American Association of Railway Surgeons, Association of Military Surgeons of the United States, Western Surgical and Gynecological Association, and was at one time president of the Whiteside County Medical Society. He was local surgeon to the Chicago and Northwestern Railway for more than twenty years, and was also surgeon to the Sterling, Dixon and Eastern Electric Railway Co. Dr. Anthony was one of the pioneer members of the medical department of the National Guard, and was for many years a major and surgeon of the Sixth Infantry. He served throughout the Spanish American War as major and surgeon of the Sixth Illinois Infantry, U. S. V., in Porto Rico. He had also served the city of Sterling as health officer and Whiteside County as county physician. While he claimed to be nothing more than a country practitioner, Dr. Anthony was a surgeon and gynecologist of no mean ability. In addition to being a physician and surgeon of high attainments, Dr. Anthony had a most lovable personality and his death means a distinct personal loss to his many friends.

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## Book Notices.

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**PLASTIC AND COSMETIC SURGERY.** By Frederick Strange Kolle, M.D., Fellow of New York Academy of Medicine; member of Deutsche Medizinische Gesellschaft, N. Y., Kings County Hospital Alumni Society, Author's Committee American Health League, Physicians' Legislature League, etc.; Author of "The X-Rays: Their Production and Application," "Medico-Surgical Radiography," "Subcutaneous Hydrocarbon Protheses," etc. With one colored plate and 522 illustrations in text. New York and London. D. Appleton and Company, 1911.

This thoroughly practical and concise treatise on Plastic and Cosmetic Surgery places in the hands of the profession an actual need which is being neglected. The work has to do mostly with deformities of the head and face, all of which are taken up in a thorough and systematic manner, and much new information is imparted. The only criticism we have to make is the insertion of pages two, three and four. Surely at this day and age of the world to reiterate in every surgical work the primary principles, otherwise the work is above all praise and should have a wide circulation.

**PRACTICAL TREATMENT: Volume 1. A Handbook of Practical Treatment.** In three volumes. By seventy-nine eminent specialists. Edited by John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania; and A. O. J. Kelly, M.D., Assistant Professor of Medicine, University of Pennsylvania. Octavo of 909 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Per volume: cloth, \$6.00 net; half morocco, \$7.50 net.

This the most ambitious work on practical treatment ever undertaken in America is well worthy of special consideration. All the best therapeutists of England and America have contributed to it. Among these we mention Drs.

Hektoen and Sippy of Chicago; Drs. Charles H. and William J. Mayo of Rochester, and Dr. George Dock of St. Louis. It is unfortunate that our Osteopathic brethren can not have access to this work, which among other things takes up quite thoroughly the subject of exercise and massage and mechano-therapy, in fact all methods of treatment are to be considered in this monumental work. Especially unfortunate is the death of Dr. A. O. J. Kelly, one of the editors, but it is probable that it was so far advanced at the time of his death that the work will lose none of its value by this unfortunate circumstance. We recommend the work in highest terms. There are to be three volumes, each of 900 pages.

**A TEXT-BOOK OF BACTERIOLOGY.** A Practical Treatise for Students and Practitioners of Medicine. By Philip Hanson Hiss, Jr., M.D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York City, and Hans Zinsser, M.D., Associate Professor in charge of Bacteriology Leland Stanford, Jr., University, Palo Alto, California. D. Appleton and Company, Publishers.

This work of 750 pages is devoted to the fundamental laws and technique of Bacteriology as illustrated by their application to the study of pathogenic bacteria. It has been the endeavor of the authors to present the subject in as broad and critical a manner as possible in dealing with infection and immunity and with methods of biologic diagnosis and treatment of disease, so that the student and practitioner of medicine, by becoming familiar with underlying laws and principles, may not only be in a position to realize the meaning and scope of some of these newer discoveries and methods, but may be in better position to decide for themselves their proper application and limitation.

"The scope and arrangement of subjects treated of in this book are the direct outcome of many years of experience in the instruction of students in medical and advanced university courses in bacteriology, and it is our hope that this volume may not only meet the needs of such students but may prove of value to the practitioner of medicine for whom it has also been written."

For the student some such work as this is absolutely necessary and for the general practitioner it offers the nearest means of bringing his knowledge of bacteriology up to date.

**DIAGNOSIS OF SYPHILIS.** By George E. Malsbary, M.D., Professor of Medicine, Cincinnati Polyclinic and Post-Graduate School.

Dr. Malsbary's work on one of the most important diseases with which the profession has to deal, comes at a very fortunate time when the attention of the whole profession of the world, and the whole world for that matter, has been directed to the diagnosis, treatment and suppression of this terrible scourge. The text book is complete in every way, and especially rich is the bibliography bearing on the diagnosis of Syphilis which covers 106 pages, and from the literature of all the civilized countries. We do not quite understand why all the bibliography in other parts of the work is not included under the one heading. There are a few typographical errors through the work which, however, does not in any way obscure the sense. It seems to us that the name of the organism which causes syphilis should always be spelled in the same way, whether in italics or not. On page 195 the text reads "supraneal" when evidently suprarenal bodies are intended. The differential diagnosis from tuberculosis, cancer and other diseases is fully developed. We quote from the preface:

"In this work the subject is considered from various standpoints. First, attention is paid to laboratory diagnosis, special stress being placed on the methods of recognition of the spirochete pallida, and the technic and relative value of the Wassermann and other tests. Second, hereditary syphilis has received ample consideration. Third, the acquired form of syphilis is discussed in its various stages. Fourth, the syphilitic affections of the various organs have received detailed description. Fifth, there is appended an extensive recent bibliography bearing upon the subject."

This work can be confidently recommended to all our readers as being an epitome of this disease completely brought up to date.



W. K. NEWCOMB, M.D.

PRESIDENT ILLINOIS STATE MEDICAL SOCIETY, 1911-1912





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## ORIGINAL ARTICLES

### SOME OF THE GIFTS OF SCIENCE TO THE WORLD \*

WILLIAM E. QUINE, M.D.  
CHICAGO

The purpose of this discourse is not to instruct members of the medical profession. I am not here to speak to them at all but to speak for them to you of the general public and to tell you something about the aims, the efforts and the achievements of medical science in the direction of conserving your highest interests and the highest interests of all mankind—happiness and life.

Although physicians profit by the misfortunes of their neighbors they are nevertheless working to lessen the number and the gravity of these misfortunes; and they measure the progress of medical science by the diminishing need for their own services.

"Cure" is the voice of the past. "Prevention" is the demand of the present. The declaration of Pasteur that "it is in the power of man to cause to disappear from the face of the earth every infectious disease" is not an idle dream. Indeed, much has been accomplished in this direction already and the enthusiasm of growing consciousness of power and of moral responsibility is increasing every day.

Discoveries in science have long histories. They do not burst out of the human mind red hot from the crucibles of scrutiny and proof, coruscating with perfection and ready for instant and infallible use; but in nearly every instance a new announcement has been preceded by years of patient investigation and every day of that time holds its own secrets of effort and of failure.

The practicing physician brings the gifts of the discoverer into the homes of the people and he is doing his part well when he administers the gifts with skill and effect. But his value to society is small compared with that of the discoverer. He benefits a few here and there but the benefits cease when he dies. A great discovery benefits all mankind and

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\* Oration in Medicine, delivered at the Sixty-First Annual Meeting of the Illinois State Medical Society, at Aurora, May 18, 1911.

its benefits continue to be showered on the just and the unjust unhindered by the death of any man.

Contemplate the achievements of Pasteur. He was not a practicing physician at all and yet it is estimated by Richard C. Cabot, one of the honored of our guild, that Pasteur worked out in his laboratory the means of saving more lives than have been saved by all the practicing physicians and surgeons now living in the world!

The mind of man, now and then, rises far above its ordinary powers and dazzles its owner and his friends by an achievement which brings him into momentary relationship with genius. We speak of this as "inspiration."

"That there is something within us that is not of us is recognized everywhere in real and in storied life." It comes like a visitor and takes command of the whole mechanism of thought and morals. It is the "muse" of the poet and the "divine afflatus" of the orator. It stirred the soul of Michael Angelo and, behold, he saw the figure of the Great Law-giver in a shapeless mass of marble. "It comes to the least of us with a voice that will be heard. It tells us what we have to do. It frames our sentences. It lends a gleam of sense or eloquence to the smallest of us all, so that we marvel at ourselves and at this divine visitor which makes our brain its instrument and invests our naked thoughts with the purple and fine linen of the kings of speech and of song."

It is the ally of the investigator. See! He has an idea that obsesses him and haunts him and persecutes him and will not let him go!

*Syphilis.*—Study the mental attitude and the labors of Paul Ehrlich which led to the discovery of his famous remedy known as "606." Starting with the knowledge that certain compounds of arsenic are inimical to disease germs having a family relationship to the germs of syphilis, he conceived the idea that the right kind of compound would destroy the germs of syphilis without injuring the human body containing them. Thereupon he began a course of investigation in which he tested one compound after another with incredible patience and minuteness until he had thrown aside 100 of them as unsatisfactory.

Undaunted by failures he kept on and on and on with a patience that never wearied and a courage that never got faint until he had accumulated 500 failures. And still he kept on with a perseverance that never faltered and a fidelity that never got careless until he had counted 600 failures. And still he kept on with a faith that would not die and a steadiness that would not yield, until on completing his 606th test he was able to stop calmly and say "I have it."

It is not claimed that the new remedy is infallible or that its use is devoid of danger under all circumstances. It is not claimed that it will cure the ravages of long-standing disease. But this much is certain: it is the most active and the most reliable anti-syphilitic agent at present known to man; and a single gift of such powers as will shower blessings on the race as long as the race endures is worth more in money than the cost of maintenance of all the medical laboratories in the world for a thousand years.



And what did Ehrlich profit by it? What would you have done with his opportunity—organized a monopoly of manufacture that would have enriched you beyond the dreams of avarice? What did he do? He donated his discovery to the world.

*Cretinism.*—The subject of cretinism is not one of large public interest in this country because the abnormality is not of common occurrence; but examples of a moderate degree of development are more common than is generally known. A baby, maybe of wholesome parentage, is born without a thyroid gland, or with one in a rudimentary state of development. Until recent years such a creature has been doomed to idiocy or imbecility and to deformed dwarfism for life. Imagine a baby a year old, the child of your friend, with a face of bloated coarseness and stupidity, a misshapen and stunted body, without a glimmer of interest in its surroundings and with no more mental alertness or responsiveness than a frog; and then imagine the future of that creature to be utterly blank with hopelessness. These were the conditions until recent years.

But medical science has found a way through the studies of Horsley, Murray and others, to compensate for the defect of organization with such completeness as that at the end of six or eight weeks of treatment a pitiful monstrosity is transformed into an alert, vivacious, active child, whose eyes are beaming with intelligence and radiant with love, whose body is developing into faultless symmetry and whose future is beckoning to a career of usefulness and honor. The rescue of even 100 babies a year from a life of dwarfism and idiocy is worth while—especially if one of them should be your baby. The healing art has accomplished nothing more brilliant than this in all its history.

*Cerebrospinal Meningitis.*—One of the most unsparing diseases that afflicts the human family is epidemic cerebrospinal meningitis; and one of the most welcome and most sorely needed of all the remedial gifts of science is the anti-meningitis serum of Flexner and Jobling, which required of them five years of studious investigation to bring it to its present degree of efficiency. Under former methods of treatment seventy-five patients in a hundred died and under the new method seventy-five in a hundred get well—a gain of fifty lives in every 100 imperiled by the malady.

Accuracy of diagnosis, promptness in the use of the serum and efficiency of dosage are indispensable requisites to the highest attainable success. The proper method of administration must be included in the requisites also, and no method is tolerated by the discoverers but that of subarachnoid injection.

The serum is now at the disposal of the medical profession but it must be remembered that it is effective only against the epidemic variety of the disease. But few physicians are equipped to distinguish this variety from the meningitides of other infections; and when such differentiation cannot be made I know of no better course of proceeding than to assume that the case in hand is of the epidemic variety. The world is indebted to Flexner for many noble gifts but this is one of the noblest

of them all. We make obeisance to him and to the Rockefeller Laboratory in token of our gratitude.

*Typhoid Fever.*—And now let us study the present status of typhoid fever as compared with that of ten years ago. Speaking in general terms, if you acquire this disease it is because you have swallowed human excrement containing the germs; and if the disease prevails broadly through a community it is because the water supply is polluted with the discharges of typhoid fever patients.

Municipal liability for sickness and death resulting from such conditions has recently been decided by the supreme court of Minnesota against the city of Mankato in that state.

In rural communities especially, and in camp life, also, flies are a menace to life for they carry the infection from open privies and trenches and deposit it on articles of food. Typhoid fever is a medieval disease. It is preventable and therefore it has no right to exist. The activity of its prevalence in any community is an index of the intelligence and of the moral responsibility of that community. In the United States there are 300,000 cases annually and 30,000 deaths.

In the Spanish-American War more of our troops were killed by it than were killed by the weapons of battle. One-fifth of all our soldiers, that is, 21,000, contracted the disease; and in 90 per cent. of our volunteer regiments it broke out within eight weeks after going into camp. Contrast this record with the statement made by President Taft at a dinner given in his honor on May 4 by the Philadelphia Medical Club. "And now," he said, "we have a division of 18,000 men in Texas and California. They have been there two months living under canvas and in a country soaked with rain; but so effective have been the health regulations and the use of the vaccine against typhoid, that not one case of this disease has appeared in the entire force, except in a teamster who had not been vaccinated."

At a meeting of the British Medical Association in 1902, Sir James Browne declared that in the South African War typhoid fever reduced the fighting strength of the British Army 80,000 men, delayed the end of the war six months and cost Great Britain 70,000,000 pounds sterling.

Even while the war was in progress Prof. A. E. Wright was elaborating his antityphoid vaccine. This was tested on many thousand British troops and on 20,000 soldiers in our own regular army and, according to the official report, there were ten times as many cases and deaths of typhoid fever among the uninoculated as occurred among the inoculated.

Protective inoculations are more important in military life, where the disposal of excreta is always a formidable problem, than they can be in civil life; and at best they must be regarded as a miserable makeshift under any conditions. If we must keep on swallowing typhoid germs by all means let us take the protective inoculations; but why should we continue to swallow the germs?

The real remedy and the only one that can completely satisfy an enlightened public conscience is the prompt destruction of the germs that leave an infected body and thus make it impossible for them to find access.

to the bodies of other people. Medical science points the way to the extermination of typhoid fever but the means must be furnished by governments—national, state and municipal—and governments have already begun to act.

On the 12th day of this month Congressman Sulzer of New York introduced a resolution proposing a convention between the United States and Canada with a view to the adoption of international laws prohibiting the pollution of the Great Lakes with sewage or other obnoxious matters; and there is no doubt as to the favorable outcome of this great movement. It is an extension of the movement inaugurated by Health Commissioner W. A. Evans of Chicago and supported by the health officers of Illinois, Indiana, Michigan and Wisconsin to lessen the pollution of the southern end of Lake Michigan by the sewage of the communities on its borders.

And we are assured that as soon as the international movement is fairly started another measure will be introduced proposing that the Federal Government prohibit pollution by sewage of all rivers and streams between two states. And then a campaign of education is to be inaugurated to encourage the enactment of similar laws by the states themselves in relation to bodies of water under their own jurisdiction. A conspicuous example of such a step is furnished by New York. Next month a law will go into effect in that state prohibiting the disposal of sewage in any lake or stream. The people have been getting ready for it for three years—for the statute was enacted in 1908, to take effect in June, 1911.

This is the greatest sanitary movement ever inaugurated in the western hemisphere, and it is another of the gifts of science to the world.

*Diphtheria.*—The general use of antidiphtheria serum is so young that even physicians under middle age remember the time when they had to do battle without it. Then diphtheria was one of the most dreaded of all diseases, but the general use of the serum has robbed it in large degree of its terrifying and destroying power.

Those of us who know what it is to be without antitoxin in the time of awful need are ever ready to thank God out of hearts full of gratitude and love for the blessed gift; but those who have never known what it is to be without it accept its benefits as complacently as a child accepts its food and with as little sense of thankfulness.

Formerly when diphtheria obtained a footing in the crowded tenement houses of the poor in large cities, it often went through them like the besom of destruction from cellar to garret and left the ashes of desolation in its wake. Our public schools have often been closed by reason of its prevalence among the pupils.

But things have changed. Our people are coming to be educated in these matters and they are quick to call for expert help when this terrible enemy of childhood is thought to be threatening their home; for well they know that the prompt and efficient use of antitoxin—on the sick as a curative agent and on the well as a preventive agent—will, with almost infallible certainty, limit the disease to the person attacked and in his case bring the malady to a quick and happy conclusion.

The effectiveness of the antitoxin is determined by the promptness with which it is used and by the sufficiency of the dose. When given on the first day of the sickness, only one patient in seventy-eight dies; when administration is delayed to the third day, one in ten dies; and when it is delayed to the fourth day, one in four dies. It is plain that delay is homicide.

But this is not all. Dosage demands greater attention in many quarters than it is receiving; for there is not a doubt that if the agent were given to the extent of 50,000 or 100,000 units as often as it is now limited to 25,000 units in cases of a desperate kind, the mortality rate of diphtheria would be still further reduced.

In view of the miracles of science we are seeing every day and the glories of achievement our imagination is able to see in the future, what mockeries of effectiveness we old doctors have been! But we tried, God knows we tried. We tried every day to do better than we had done the day before—and you young fellows cannot do better than that.

*Malaria.*—Now study the diminishing activity of malaria, a disease that is older than history. The fact that it does not concern this particular community does not prevent it from being the greatest endemic disease in the world. It still abounds in southern Europe, prevails with fierce activity through the southern half of Asia and the northern half of Australia, while the western coast of Africa and many of the river basins and valleys of that great continent are made by it veritable valleys of the shadow of death.

It is estimated that in India it caused half a million deaths annually from 1887 to 1897, and that Italy paid tribute to it to the extent of 2,000,000 cases annually and 15,000 deaths.

Our own country cannot be considered greatly afflicted in this way, and yet in 1860 malaria caused 4 per cent. of all deaths in the United States and in 1880 it caused 2.6 per cent. of all deaths; but notwithstanding that the extent of its prevalence has been enormously lessened in recent years, there are still hundreds of localities left, and a few extensive regions where in the summer and autumn months several cases occur in nearly every family.

In the tropical regions of the western hemisphere and in the islands of the sea of corresponding latitude, the disorder is still active and dangerous to life. Until very recently the Isthmus of Panama has been shunned and dreaded as one of the most pestilential regions of the world. It was malaria aided by occasional outbreaks of yellow fever that defeated the efforts of the French to construct the Panama Canal, and it is the conquest of malaria and yellow fever that enables our government to construct it now.

Look at the figures: between 1881 and 1904, among the employees of the French Canal Company, numbering 18,000 or less, the *monthly* death rate ranged from 6 to 17.5 per cent.; and had it not been for the ceaseless stream of recruits the whole working force would have been swept off the face of the earth in a year; whereas, under the administration of Colonel Gorgas of the United States Army, in May, 1908, the



death rate among 44,816 employees had fallen to 1 per cent. Science has made the Canal Zone as healthful as well-chosen localities in temperate regions.

A disease that makes 50,000,000 people sick every year and causes a quarter of a million deaths is obviously of stupendous economic importance. And all this devastation is caused by mosquitoes! It is mosquitoes of a particular species and nothing else that carried the malarial germs from man to man. By exterminating the insect on the one hand and securing people against its attacks on the other, the disease itself will be driven from the earth.

It is a great problem but not greater than the powers of man. Even as cautious and learned a writer as Osler implies that the victory is already won and what remains to be done to make it complete are mere matters of detail.

Now, try to compute the saving of life and of misery and poverty and woe—to say nothing of the promotion of commerce and of colonization, which this gift of science has already wrought; and do not lose sight of the fact that the givers of the gifts have not received, nor sought, a penny of compensation for their work.

*Hookworm Disease.*—Poverty is the result of inefficiency and inefficiency is the result of organic defect or of disease. The chronically ill are the poorest of the poor, and we are just beginning to learn that the first step toward the regeneration of our paupers is to cure them. These facts are nowhere more clearly exemplified than they are in relation to a large class of people in the South known as the "poor white trash."

And yet there are no people in this country who can show a straighter line of descent from the Puritan and the Cavalier of early days than many of these despised and degenerate creatures can—despised even by the negro slaves of antebellum days.

And behold, it is just coming to be known that this awful spectacle of degradation has been caused in some part by the hookworm disease—a disease which, in one form or another, prevails throughout the tropical and subtropical regions in both hemispheres, and in a few isolated localities in temperate zones, and nowhere with greater rack and ruin of mind and body than among our own people of the South.

"In no other disease is suffering and incapacity so prolonged; in no other disease is the victim more persistently a menace to his neighbor; and in no other of like gravity is the prospect of cure better<sup>1</sup>" and the certainty of prevention and of final extinction of the disease more obvious.

In general terms, it results from unmentionable habits of filthiness in respect to the disposal of human excreta, and the eradication of the disorder lies in the universal enforcement of rational regulations appertaining to such matters.

As Stiles puts it, "The privy is the great sanitary problem of the open country and non-sewered village." Sanitary privies will eradicate the hookworm disease.

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<sup>1</sup> Abstract from article of unremembered author.

In infected districts the degradation and filthiness of the people, the pitiful incapacity of their minds, their shambling languor and weariness, their unproductiveness and the rapidity with which they become exhausted on trifling exertion, their sodden indifference to every incentive to manliness and manly endeavor, and the dwarfed, undeveloped and hideous degeneracy of their children contribute to make a spectacle of misery, incompetency and progressive deterioration which is enough to overwhelm the capacity of any heart for pity and for love—except that of the lowly Nazarene.

The poor white trash! If Mr. John D. Rockefeller had never done another act of benevolence than that of founding and supporting the Commission for the Extermination of the Hookworm Disease, the people of this country might well stand up and with uncovered heads bless his name forever and forever more.

And the work has made noble progress already. A campaign of education is going on, supported by every newspaper, every doctor and every public spirited citizen in the infected regions.

Victory is assured, and, this accomplished, the degenerate progeny of the Puritan and Cavalier may come back into their normal heritage and blossom into the completeness of American manhood and womanhood by a process just as natural as that by which a rose bush rises to the grace of inflorescence.

Credit medical science for this gift to the world.

*Yellow Fever.*—The practical extermination of this scourge is one of the glories of our generation and the work of American physicians exclusively. During the past 200 years there have been ninety-five epidemics of yellow fever in our country and during the last 100 years there have been 500,000 cases and 100,000 deaths. Its home is the West Indies and the City of Havana is the great distributing point.

It has defeated the administration of governments and brought to ruin great military expeditions. In 1802 France sent an army of 25,000 to subjugate Hayti, and in a single season 22,000 of those troops were slain by yellow fever. It was neither the genius nor the heroism of the mixed races of Cuba that triumphed over Spanish rule; it was yellow fever.

In 1800 the pestilence was imported from Havana into Spain and in the Province of Andalusia alone there were 300,000 cases and 60,000 deaths; and in the city of Gibraltar out of a population of 9,000 only twenty-eight escaped attack.

In 1821 the city of Barcelona had 20,000 deaths from it and for half a century our city of New Orleans has paid an annual tribute of 1,000 lives. The appearance of an epidemic in one of our southern cities sends a wave of terror over a large section, arrests commerce and drives people from their homes to places of fancied security.

In 1878 Dr. Samuel Choppin, president of the state board of health of Louisiana, estimated the cost of the epidemic of that year to the material interests of New Orleans at \$11,000,000; and Dr. Benjamin Lee, some time president of the American Public Health Association, in an address delivered in 1889 advocating the annexation of Cuba as a

measure of self defense against yellow fever, declared that a single widespread epidemic of this disease cost the United States more in money, to say nothing of the grief and misery it entails, than would the purchase of the island.

That this is not immeasurable exaggeration, witness the memorials addressed to President McKinley in 1897 and 1898 by the American Public Health Association in which it appears that the epidemic of 1878 had not only cost Louisiana, Mississippi and Alabama 16,000 lives, but had entailed a material loss to the country of \$100,000,000.

Also witness the testimony of President Taft given in a speech on the fourth day of this month before the Philadelphia Medical Club; the President declared that there was complete justification for the war with Spain in the persistent prevalence of yellow fever in Cuba which annually menaced the life of our southern cities; and that the cost of the war and of the administration of the responsibilities which followed was as nothing compared with the benefits to the human race which had already accrued and which were certain to continue to the end of time.

For 150 years Havana was the breeding place of epidemics and a menace to the neighboring parts of the western world; and during all those years Spain never made a serious effort to mitigate the horrors of it.

But soon after Cuba passed under the control of the United States government the surgeon-general of the army appointed a commission consisting of Drs. Reed, Lazear, Carroll and Agramonte to attack the problem; and this the commission did with such intelligence and vigor that from September, 1901, to September, 1905, not one case of yellow fever originated in the city of Havana. But then, owing to relaxation of vigilance, a limited outbreak did occur, but was promptly suppressed.

The commission discovered that the yellow scourge, like malaria, is mosquito borne and is not propagated in any other way; and that by destroying the insects and their breeding places on the one hand and, on the other, surrounding yellow fever patients with wire screens of so fine a mesh that the insects could neither get in nor out, the propagation of the scourge was arrested. Think of it. A pestilence exterminated! Never again will yellow fever prevail in epidemics. Never again will it throw our people of the South into terror and panic, or destroy their commerce or desolate their homes. This is not the triumph of a mere generation. Yellow fever is conquered forever, and a hundred years from now it will figure as one of the fading curiosities of history.

In every important city there are stately monuments to popular idols which stand as silent witnesses of a people's gratitude and love; and in every important building of the nation and of the state there are portraits and statues to commemorate the achievements of great lives. But there are no doctors represented there.

We have heard of a "Hall of Fame" in which are to be gathered the effigies and the annals of the nation's benefactors; and we have been told that the committee having the matter in charge had not been able to discover a single member of the medical profession of sufficient merit to deserve a place in this galaxy of immortals.



Halls of Fame, it seems, are intended for artists and poets and novelists; for explorers and statesmen and soldiers; but who among you will rise and say that the achievements of the Yellow Fever Commission in Cuba do not represent a greater wealth of service to mankind than has been rendered by all the artists and poets and novelists that ever were born? What matters it that three members of the commission are dead and that Agramonte alone is living?

"Dead," did I say—"dead"? No, not that. They merely broke acquaintance with their friends to make acquaintance with immortality.

And what has become of their families? An appreciative and grateful congress has voted \$125 a month for the support of each of the bereaved families; and it may give Agramonte a vote of thanks when it has time.

*Cholera.*—Fifty years ago cholera was universally regarded as the most destructive of all epidemic diseases then prevalent; but now it is an open question whether there are a dozen physicians in this room who have ever seen a case and it is practically certain that there is not a layman present who has ever had a moment's concern about it. Prior to 1817 it was confined to India and to lines of caravan travel in that region; but that year witnessed the beginning of one of the most devastating pandemics in history.

Since then epidemics, great and small, have appeared about every ten years. There is one going on now. It started from India in 1902, spread slowly over the continent of Asia, decimated the population of Egypt and Algeria, became strongly established in various parts of Russia, obtained a fitting lodgment in Germany on several occasions, and sorely afflicted Greece, Italy and the Madeira Islands. During the past year Japan and the Philippines have been severely scourged by it, and it is spreading slowly in Hawaii at the present time.

The last American epidemic occurred in 1873, but since then the pestilence has been brought to our ports of entry on both shores—Atlantic and Pacific—again and again and yet again, but in every instance invasion has been prevented by our efficient quarantine officers.

The disease is caused by swallowing the germs discharged by a previous cholera patient, and these germs may be carried from place to place by flies.

One of the difficulties to be overcome in the battle for extermination arises from the fact that there are many "cholera carriers" who have not the disease themselves but who, nevertheless, are discharging countless virulent germs from their bodies every day. Such persons may easily pass the most vigilant and devoted quarantine officers and start epidemic foci in the best guarded countries in the world.

You can little imagine the conditions of half a century ago when cholera swept over the earth as unrestrained as the winds.

Koch has estimated that 50 per cent. of people are immune—and many of these are "cholera carriers"—and that, of those who contract the malady, 50 per cent. die.

Without doubt the very extensive use of anticholera vaccine, in recent years, has greatly retarded the spread of the disorder—assisted in thou-



sands of localities by the prompt disinfection of choleraic discharges; but it is not clear that the physicians of the present day are any more effective in the use of curative agencies than were their predecessors of fifty years ago.

Then, and previously, when it became known that cholera had broken beyond the boundaries of its home and was rapidly spreading, a wave of fear passed over the civilized world; and you will not wonder if you remember that a single epidemic of this disease has been known to destroy as many as 25,000,000 lives.

Think of it! A single epidemic has destroyed more people and laid waste more homes than all the battles and all the disasters on land and sea and all the individual accidents and crimes of a hundred years!

In childhood I had the opportunity to learn something about the ravages of the pestilence and to watch the medical profession in action; and I could weep now over the futility of the efforts and the sacrifices of the physicians of pioneer days to stay the tempest of death.

When the hum of machinery was stilled; when palaces of trade were closed and boarded and abandoned; when courts of justice were adjourned *sine die* and places of amusement were hushed and dark; when the priests and ministers of God were too busy to go to church; when the avenues of traffic were monopolized by funerals; when there were not enough well left to nurse the sick and bury the dead and the whole world seemed helpless with horror and despair—even then have I seen our fathers in medicine hurrying and straining by night and by day in answer to the calls for help from their stricken people. And when the tornado of death had abated, every man who was still on his feet was standing at his post of duty.

Steadfast old fellows!

And they tried—God knows how they tried. They tried and tried and tried—till they died. Gallant old fellows!

I can imagine that some of them are listening to me now. Yes, I feel that there is a presence here which I cannot see. The air is vibrant with the irradiations of heroism and devotion. Hush. There are voices which I cannot hear—and I feel a message bearing in upon me from the long ago. Hush. It says: "Tell—your—people—to—beat—it—if—they—can. God—bless—them—every—one. Good-bye."

That's all. They're gone—bully old fellows!

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## PERINEAL PLASTIC OPERATIONS \*

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I recognize, while working in my specialty in adjoining states and at home, that plastic surgery for laceration incident to parturition is greatly neglected. Lacerations throughout labor are common, and the sequelæ of neglected repair to anatomic or physiologic relations give rise to symp-

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\* Read (by invitation) before the Chicago Medical Society, April 5, 1911.

toms that the specialists and general practitioners should not overlook.

Our overweening interest in pelvic and abdominal surgery resulted in a positive, neglected interest in common accidents and afflictions lamentable in most homes, where children are found.

Some years ago a student asked me how he could pay his expenses while visiting the Philadelphia clinics. My reply was, "Write up everything you see and send it to the journals. I will do some plastic work this morning; entitle it 'Plastic Surgery, a Lost Art.'" I did not call his attention to the great work of Sims and his pupils, and the lasting interest of Emmet (Sims' pupil) and his pupils in perfecting Sims' work. The early specialist got great glory and fame out of one procedure, and it remained for his followers and pupils to perfect that and other collaterals.

My visitor wrote some interesting papers and did some refined work when he got home, with nothing more to work on than object lessons and theory, an unfortunate and incomplete apprenticeship for the accidents awaiting him. He commented on the extent of the injuries and the great number—repeated the comment of European specialists when Sims and his pupils published their wonderful work, "The Cure of Vesical Fistula," that the practitioner or obstetrician was guilty of recklessness and ignorance, until he was informed that his town and country was full of fistula and bad lacerations." He found them both in good number when he got home.

The foreigners were kindly warned that the neglected lesions came from European alms-houses, or they had emptied their neglected material into American charities, the only real safe and scientific refuge at that time.

We have a satisfactory explanation in rather an unworthy interest in new surgery, in the repair or treatment of gastric ulcers that either exist or do not exist, or surgery done for fancied lesions in non-septic zones, and on subjects long since past the age or period of usefulness.

I would like to interest the profession into more scientific consideration in the "misery," as the colored woman put it, of their mothers, wives, sisters and daughters in the neglect of simple lesion and terrible mutilation.

Many doubt the occurrence of simple tears to the sphincter—they produce no inconvenience after the parts have completely healed. This is an error, because normal, anatomic relations have ceased. We have great relaxation and a vaginal respiration. The admission of air charged with dust and germs, the admixture of normal mucus and the decomposition that follows—a pruritus that greatly distresses. The existence of other lesions that we have not recognized, causing difficulty that we cannot explain, because we have not recognized the seat of the lesion.

The story of the laboring woman, toiling without complaint, with deep injuries and no symptoms, is an error. They do suffer, but we have too little sympathy to look fully into their afflictions. Prison officials put one wee light and small ventilation in their cells, and no possible influence can convince them of their ignorance and wickedness.

Practitioners do recognize common instances where the vaginal outlet is greatly relaxed, as the mouth of a bag would be from which the running-string had been withdrawn. In some of these cases no apparent loss of the perineal body can be detected.

With the same train of symptoms as found in other conditions, the Baker-Brown operation was largely employed throughout the world. It is purely an outside operation, often on structures, never united, never torn. Fortunately, we had specialists looking for a solution in injuries of deeper structures and resorting to other means of relief—pessary and suspension.

The modifications of the skin operations were devised by Emmet of New York, Hadra of Texas and some one in the Black Forest of Germany, all studying carefully the injuries of the pelvic floor or diaphragm. Unfortunately, a variety of one-, two- or three-stitch operations and imperfect flap-splitting procedures, dealing only with superficial structures of the mucous membrane of the vaginal septum.

Before discussing briefly with you the operation that I feel sure will give the best results, I want to condemn the common use of bind-halters and crutches. They rob the resident body of the object lesson of studying the injuries, of viewing the denudations and suturing.

Holding the knee with the patellæ under his axillæ gives him perfect command of his position and liberty of both hands to assist in every detail. After assisting and viewing plastic operations, he is convinced that he can do them. One prominent teacher and operator uses bind-halters, crutches and refrigerator hooks, and details his residents to smoke cigarettes and flirt with nurses.

Early in my professional life, over thirty years ago, I fortunately got every possible advantage, with an abundance of dispensary material, in an old Philadelphia charity. Lacerations of every degree were as common as venereal disease. I studied both subjects at the same time. I did three perineal operations each Sunday. Had water colors made of all published operations—Simon, Hegar, Hildebrand, Freund, Fritch, Baker Brown and others. I watched them carefully and removed the stitches; about all of them were modifications of the Baker Brown operation. They had entered the vaginal orifice, and that was all. They had not gone beyond mucous membrane labial structures, nor deeper than the crown of the rectocele.

At the meeting of the American Gynecological Society in 1883, when Dr. Thomas Addis Emmet presented his paper on "The Etiology of Perineal Laceration, with a New Method of Operation for Its Repair," it was evident, in the words of an eminent gynecologist, that the members of the Society were very much at a loss to comprehend the steps of the operation as described by its illustrious originator. After a number of years, it was still not understood generally in my own city, while at the present time we rarely hear of anyone performing the true Emmet operation, unless it has been improved by some supposed modification. These modifications are for the most part meretricious, and so far as I can rely

on my own observation and investigation, can lay little claim to either originality or importance.

The Emmet operation seems to me to fulfil every indication for the restoration of the damaged perineum, far better than any operation before or since devised, not excepting the so-called flap-splitting or Tait's operation, over which so much furor has been raised.

I have, indeed, nothing new to offer, except the result of my own experience, which has been somewhat extensive, while at the same time comparative, since most later and earlier operations have, in what seemed suitable cases, been resorted to—so that the opinions here presented are not in any sense one-sided or narrowed by a limited observation and operative horizon.

I am firmly convinced that the value of the operation has not been recognized, because the published reports of it have been so meager and so little descriptive, excepting some explanation and modifications, that the very idea of the operation has not been grasped except by those who, like myself, have been fortunate enough to have Emmet personally demonstrate the operation and its advantages. To that demonstration, and that alone, I confess my indebtedness of what I know of the operation. Unfortunately, his original pamphlet was confusing rather than instructive and explanatory, to those not already comprehending the operation. In the words of the gynecologist before quoted, a drawing was necessary for the exact understanding of the successive steps of the operation. This deficiency was, unfortunately, not overcome in the last edition of Dr. Emmet's book, in which his failure picturesquely to illustrate the various steps of the operation, together with the defects it is intended to correct, has left him entirely at the mercy, in the later literature, of those who gained glory by adapting their own illustrations to the original operation, modified by this stitch or that, though not essentially.

To test my knowledge of the Emmet operation, I listed for a paper for the meeting of the American Association of Obstetricians and Gynecologists at the Academy of Medicine, New York, and said: "Here in New York I willingly leave it an open question, whether in any real sense Emmet's operation has ever been at all modified into lines not indicated by Emmet himself."

He believes that the damage that leads to the severe consequences of loss of support to the pelvic diaphragm is principally in the deep layers of the pelvic fasciæ—a separation of the fibers of these fasciæ from the outlet of the vagina. The soft parts of the vagina are crowded up in advance as the fetal head passes. When the head of the child is forced down on the so-called perineal body, the perineal tissues are stretched transversely before the head appears at all at the vaginal outlet.

The so-called perineal body is attached principally to the two rami of the ischia, through the strong and almost inelastic ischio-perineal fasciæ. When the head, following the sacral curve, crowds down the vaginal tissues before it, it meets with almost its entire resistance from the lack of extensibility in these ligaments. If the force is severe enough they will separate, not by tear from the fourchette downward, but by a separation



of these fibers within the mucous membrane, from their insertion from without and below the vaginal orifice. It is the pelvic fascia that supports the vagina, and this fascia is often separated from its attachment to the vagina, or laterally from one or both rami, at the passage of the head during parturition.

When these strong fascial and muscular tissues are separated, it is not surprising that the comparatively weak orifice of the vagina should also tear to a greater or less extent. The tear here, however, is of infinitely less importance than is the rupture of the ischio-perineal fascia. These fasciæ preserve the proper resistance of the floor of the pelvis. This removed, the anterior and posterior walls of the vagina have lost their support, and they must prolapse through the now weakened vaginal ring. The result is not a mere matter of theory or speculation. It is well known that rectocele occurs constantly in patients in whom the fourchette has not been torn. The perineum, we would say, at simple inspection, is intact; but, return the rectocele and examine the posterior and lateral walls, and it will be found that nothing remains of the recto-vaginal septum but the thin submucous tissues of the rectum and vagina. Ruptures are by no means always prolongations of vaginal or perineal tears.

A vagino-perineal laceration may pass around the sphincter ani. If the levator ani gives away laterally, the laceration is not infrequently subcutaneous, or rather supravaginal, and does not communicate with the vagina. It is easily shown that the perineum is a thin diaphragm, not a body of firm fascia, muscle or connective tissue. It is also easily seen that running far up the vaginal wall on either side there is a deficiency of natural support in these cases. The rupture, which may or may not have been sub-mucous, is not the median line, but has been more severe on one side than the other. The sulci, which exist normally in every vagina, are simple folds of the mucous membrane, but these have become now deep pockets, whose depths almost penetrate to the rectal wall.

You will observe a huge prolapse in the study of many cases, prolapse evidently not due to destruction of the perineum, which is almost intact, but evidently to a want of resisting power in the pelvic floor.

In Emmet's expressive illustration, the bag has lost its puckering string. You will observe, however, that there is here more or less destruction of the perineum, but cases are not rare in which the fourchette is intact. In all these cases Emmet claims that the perineum has been ruptured, though not actually lacerated, and performs the same operation as he would were the skin and superficial fascia torn to the sphincter. With this view I am in entire harmony.

In order to make Emmet's operation thoroughly appreciated, I will call attention briefly to operations previously devised to meet the same indications. You will recall those of Simon, Hegar, Hildebrand, Freund, Bantock, Baker Brown and Emmet's trefoil operation. I will enter on no extended discussion of these, referring briefly only to those of Brown and the early Emmet operation.

Baker Brown, conceiving that the sole loss of tissue lay in the superficial structures, denuded the mucous membrane at the junction of the

skin, for a width of one-half inch from the original site of the hymen on the one side, to an equal extent on the other, thus forming a U-shaped or horseshoe denudation. Deep stitches were then inserted into the skin from one side of the vagina into a corresponding situation on the other, by which the two arms of the U were brought into apposition, and the stitches attached to quills on either side. By this means he indeed restored the perineum so that it was even longer than before, but failed in the real intention, since little by little the rectocele again prolapsed through the narrowed outlet to its original condition. Not appreciating the causes of this failure, Brown attempted to obtain success by still further narrowing the vaginal outlet, going so far, in some cases, as to render sexual relation impossible, but still failing in the great majority of his cases to relieve the condition for which he operated. From that time to the present surgeons (gynecologists) have struggled with the problem.

A great advance was made when the denudation was extended so as to include a portion of the rectocele, and to restore by cicatrical healing the perineal body, whose function is relatively important.

I show here the drawings illustrating Emmet's trefoil operation, which is, perhaps, the best example of this method of closure.

A denudation beginning at labia was made, in the shape of a trefoil, of which two lateral leaflets were made on opposite labia, while the middle leaf was made out of the projecting rectocele. Deep sutures were then passed from the skin surface through two or two and one-half inches of tissue, so as to pucker the three lobes into a mass, of which the crest of the rectocele remarked the summit, thus forming the new perineum.

One only need consider the enormous amount of tissue included within the ligatures passed after this method. Driven through gluteal and labial tissues, and including in their embrace a great mass of incongruous flesh, is it any wonder that discomforts, perineal abscesses and non-union are not infrequent results? Moreover, in successful cases the results were frequently anything but happy. In order to hold the rectocele, the perineum was closed so high as to be an actual bar to marital relations, while the perineum did not altogether prevent subsequent rolling out of the vaginal wall, and at least a partial return of the rectocele, with but a partial prevention of the dragging sensation, so often the worst affliction of this condition.

The old operations aimed to replace the perineal body by a new structure built from the adjacent parts. But when the perineum is lacerated it is not destroyed. If we can bring together the ends of the ruptured ischio-perineal ligaments, we will absolutely restore the supporting power of the perineum.

Dr. Savage, in his classical work, appreciated this fact, and in describing the operation he says: "The author's plan includes the resection of all the redundant vagina at its ano-vulvar margin in the first place; and in the second, the removal of a triangular portion of vaginal mucous membrane, the middle angle extending along the posterior wall of the vagina, securing with quill sutures, in the usual way. It is the only plan which seems effectual in bringing together again at the ano-vulvar perineum the

two ischio-perineal ligaments." Were the rupture a sagittal one, Savage's plan would be unexceptionable, but the rupture of the ischio-perineal fascia does not usually occur in the median line. The rupture is lateral as well as posterior, as one can readily convince himself by simply examining the degree of resistance which the finger meets when pressing toward the coccyx. Moreover, the method of bringing together the edges of the denudations is essentially defective.

To attempt to obtain complete union in a plastic operation by means of sutures driven through 2 inches or more of healthy tissue remote from the freshened edges, can but be regarded as faulty.

Emmet's last operation aims at removing superfluous vaginal mucous membrane and scar tissue at the vagina-vulvar orifice, continuing at the same time the denudation along the lines of the original rupture. As this line extends usually along the two sulci, the denudation assumes, rudely, the form of a crescent, whose convexity is the boundary of the skin and mucous membrane of the vulva, while the concavity is marked by the summit of the projecting rectocele, and the cusps extend up the lateral deep sulci and posterior wall of the vagina. Finally, he introduces stitches entirely within the vagina, beginning at the apex of a cusp or sulcus, and closing by bringing the two denuded edges of this cusp together. (Blackboard illustrations.)

The value of many of the so-called modifications can also be comparatively studied, at the same time each cup or sulcus being closed down to the crest of the rectocele, a single stitch is passed from one side to the other through the skin laterally, and the crest of the rectocele centrally, thus approximating these three points. After the insertion of the crown stitch, one or more superficial stitches is sometimes necessary, according as there has been greater or less laceration.

Some of the minor details of the operation it is not necessary to describe. It is worthy of mention, however, that the essential landmarks of the operation, namely, the crest of the rectocele, or its most projecting part, and the lateral mucous membrane, at the highest point to which it is intended to carry the denudation, are not to be lost sight of, nor changed as the operation proceeds. The tissue on either side is controlled by an assistant, by means of a tenaculum and the denudations accomplished from below upward, until the crest of the rectocele is reached. The denudation is afterward extended up the sulcus on either side, varying according as the tear is longer or deeper. If the sulcus on one side, usually the right, be smaller than on the other, the denuded surface will also be smaller. When the sulci are to be closed, the apex of each in turn is to be entered by a tenaculum, and the sulcus thus put in position for the easy entrance of stitches. After the sulci have been closed, when the crown stitch above described is introduced, the inside stitches entirely disappear.

The after-treatment is simple: rest, catheterization, if necessary. The bowels are to be kept easily open. From the operation I have yet to see the slightest inflammation, cellulitis or phlebitis. This is in wonderful contrast with those operations in which deep tissue stitches are intro-



duced, and where the degree of pain produced is excessive. The stitches are removed at the end of eight or ten days. The large degree of success attending the operation over all others is sufficient alone to recommend it primarily in all lesions of the perineum.

In a large dispensary experience with poverty-stricken patients, numbering thousands, I have had no failures, so far as healing is concerned, or other untoward symptoms, and in but few could it be recognized that any operation had been done.

With such a record in my hand, I feel that in those of any other careful surgeon the sequence of the operation must be just as successful. In scientific exactness the various flap-splitting operations cannot compare with it, and from an anatomic standpoint, certainly cannot undergo a critical examination.

Fortunately, but few teachers are recommending late suturing in primary operations, twenty-four or forty-eight hours after laceration. Such operations result in sore disappointment to the patients, and are delusions that should not be practiced. The open treatment, aseptic douches and the occlusion pad give better results.

A word about common practices that should be corrected by a more refined knowledge of practical obstetrics:

I am satisfied that an apprenticeship in practical obstetrics, in a maternity or in alleys and courts, is of more real practical value to the student than a clinical apprenticeship in any other department of medicine or surgery or the specialties.

By prolonged experience you become very dextrous and safe in high forceps deliveries, and also in the application of the traction principle. One of my assistants has made over 250 high applications of the forceps without the loss of mother or child. After I got hold of the traction forceps my mortality fell to *nil*.

The absence of an apprenticeship results in premature application of the forceps, deep and extensive injuries, crippling women for life. Excuses justifying the premature application—"reed bird for supper," or "I cannot afford to attend women for small fees, \$5 or \$10, and not use the forceps," are all a variety of criminal assaults, resulting in one of the numerous varieties of race suicide. The perineum is, beyond question, frequently lacerated by instrumental delivery.

#### CONCLUSION

I am sorry so many men differ in the technic of their operations, and at the same time admit that their early cases were not a success. They are greatly provoked when we run a scissors through a skin perineum that anatomically never existed, and do the operation over by an inside method. We have said too much about the necessity of exposing and uniting the ends of the torn muscle and fascia, superficial, middle and deep. They are greatly retracted and hard to find.

My observations among the poor have impressed me with the fact that poverty has its blessings. Good cervical and perineal surgery has wholly immunized or prevented the occurrence of malignancy. Scar tis-



sue is said to be at the bottom of malignancy. In not a single instance in primary tears at the Preston Retreat, in consultation, in a generous court and alley practice, and my private hospital, has malignancy followed. If so, they have fallen into other hands. Again, the women have continued to bear children.

The well-to-do, seeking repairs, are sterile, often suffer from incipient or advanced malignancy. Primarily, the results are pleasing and attractive, but they should be well done, following our modern ideas—ideal surgery, early good work.

A study of the appalling, political neglect of women in county poor-houses and asylums, suffering from complete protrusion of their pelvic viscera, a variety of mental disturbances, early and late in life, are largely due to prolonged suffering, gastric disturbances, backache, weight and pressure, and the distressing sensation of something protruding, and the constant desire to cross their legs while shopping or entertaining, to relieve distressing sensations.

Wives and mothers should be the most comfortable people living.

Emmet kindly did some operations for me in Philadelphia. The patients were sterile, anemic and very miserable. Results of operations perfect and interesting, followed by conceptions.

That beautiful little book, "The Lady of the Decoration," says she had lost all that was dear to a woman—home and maternity. I have been greatly impressed by the references to maternity in recent fiction and literature.

President Roosevelt commonly refers to the one method of race suicide he knows, the crochet needle, and the criminal abortionist. Had he known how stupid, and how little we know or care about the sufferings of women from accidents in childbearing and the universal neglect, I am satisfied he would have put Judge Landis on another job.

#### DISCUSSION

Franklin H. Martin: Before opening the discussion on the paper I feel that the management of the society should be congratulated on bringing two such men here to entertain and instruct us. "All the world loves a lover," 'tis said, and that would also apply to the fighter, and we have all often read with great interest of the fight that Joseph Price has kept up on all subjects where a fight was necessary. Wherever the head of a monstrosity in surgery or pathology appeared we could always depend on "our Joe" to hit it and he is still calling to our mind things which we ought to remember.

What I have to say in the way of discussion will be very little. First I say that we should worry less, possibly, about women with carcinoma who don't want to die and worry more about the great class of women who because of their suffering, are afraid they won't die—those suffering from post-partum miseries. Probably the largest class of invalids we have among women come under this head. The reason for this has been brought out so fully in the paper under two heads, "ignorance" and "neglect," that it is not necessary to dwell on these points.

I hesitate to say one thing; that is, to take issue with Dr. Price on his perineal operation. I am surprised to find an old pupil of Lawson Tait's recommending an Emmet operation. His claim is that it will cure more definitely the accompanying rectocele.

The flap-splitting method of exposing the torn and defective perineal tissues, is far more rational and has a distinct advantage over any form of denuding

methods. The exposure of deep and lateral tissues with the flap splitting operation is as thorough as you care to have it. The denuding procedure seems to presuppose that hypertrophy of the mucous membrane of the vagina occurs as a result of a laceration of the perineum, or that the mucous membrane has a powerful supporting function in the mechanism of the recto-vaginal septum. While in reality it has not become hypertrophied notwithstanding it frequently protrudes as the covering of a rectocele or as the result of a telescoping of the vagina. When the vagina is telescoped or the mucous membrane projects as a result of a rectocele, it will be found so, not on account of membrane hypertrophy but because of a prolapsed uterus. This can be demonstrated by temporarily repositing the uterus and elevating its cervix to its normal height in the hollow of the sacrum. This maneuver will demonstrate that the posterior vaginal mucous membrane is not too long, and any shortening of that mucous membrane by posterior wall denudation will unduly shorten that wall and make a permanent replacement of the cervix impossible.

Neither is it rational for us to expect this mucous membrane to aid in strength the perineum proper by narrowing it and thus purse-stringing the outlet of the vagina by mucous membrane denudation.

In the flap-splitting operation properly modified to suit each occasion, nothing is depended on to support and reinforce the perineum except the original supporting tissues of the perineum, viz: fascia, supporting muscles and connective tissue; and the original normal mucous membrane is left to perform its function of covering and protecting.

J. B. DeLee: The questions Dr. Price brought out are of vital importance to the obstetrician and I believe the fundamental reason that so many women have injuries during labor is that it is taught in college that pregnancy and labor are normal conditions. To-day they are pathologic—to have a baby to-day is, in my opinion, a pathologic function. In support of this statement I will call your attention to the mortality that obstetrics gives. The best statistics show a mortality of one in 173. Show me another function that has any necessary mortality! Then there are invariably perineal and genital tears. Show me any other normal function in which tissue is torn! Three to five per cent. of the children die. Show me another condition where there is such a rate! I could go on much farther but it is hardly necessary. When we teach that obstetrics is a pathologic function you will raise it in the eyes of the doctor, the student and the public and you will attract to it the best men of the profession instead of the midwives and those who think that when all else fails they can be obstetricians!

One point mentioned which I think needs more attention is subacute and acute infection in the vagina. Any one who does a large charity practice, or any practice among the very poor knows that where they are careless about their persons, dirt does get into the vagina. This sets up low-grade infection in the cervix and the patient will have thickening in the pelvic structure, pain in the back and other phenomena similar to pains of catarrhal affections of the chronic type.

Another point of great importance is this (and I wish also to call it to the attention of surgeons present and it is one of the reasons why I consented to come down here to discuss this subject): relaxation of the pelvic floor is due to two causes: laceration and over-stretching. Overstretching is almost always not "over-stretching," but microscopic ruptures. The muscles instead of stretching, give way. If anyone has dissected a woman where this supposed stretched condition exists he will be astonished at the number of small injuries which the microscope will disclose. Therefore, when a physician thinks he has successfully delivered a woman without laceration, and has congratulated himself that he has delivered her without tear because of muscle stretching, he is wrong. These very women come back to the gynecologist later for treatment of conditions caused by this very delivery. I believe that a clean-cut incision into the muscle will result in much better healing than this condition following Nature's effort at stretching. I would like to show the society a new operation for repairing deep injuries to the pelvic floor, lacerations of the levator ani behind the rectum, near the raphé,

an operation which unites the two lateral halves of the pubococcygeus and puborectal portions of this muscle. In brief the operation is this (demonstrating): A curved transverse incision is made half way between the anus and the coccyx, the skin and external sphincter ani are lifted toward the pubis. By blunt dissection the lower portions of the levator ani pillars on either side are exposed. These pillars of the levator ani are united by several catgut sutures behind the rectum, and thus lift it up to its original position. Then the sphincter ani is sewed in place, and finally the skin. I have done this operation on cadavers and it works well for perineal tears.

I would like surgeons to try this operation for prolapsed rectum. It works beautifully upon the cadaver and I would like to know whether it would be practical. I must admit, however, that it is not without danger. It involves deep dissection in the neighborhood of veins which are likely to be infected.

H. T. Byford: Dr. Price paid most of his attention to the "sequelæ," and I would like to offer some few remarks on the "neglect." It is the neglected labors that make minor gynecology. An illustration is the disappearance of vesicovaginal fistula from our clinics. Much neglect still exists in post-partum treatment. It is only a few years ago that we did not operate after labor on the lacerated perineum. We bound the patients' knees together and then expected her to get well under almost impossible conditions.

In recent years we have found that almost all parturients who suffered complete rupture of the uterus died unless they were operated on. So we were forced to operate. Those suffering lacerations extending into the subperitoneal connective tissue are apt to die of septicemia or be deformed by extensive scars, unless operated upon. When the cervix is deeply lacerated without involvement of the vaginal walls the same kind of reasoning is applicable. It should be repaired to prevent local infection, eversion, cystic degeneration of the cervix and possible displacement.

As to the effect of laceration about the outlet: probably many lacerated women go on with what Dr. De Lee has called coal dust in the vagina for years. After the change of life when the muscular fibers and fat are absorbed, there is no support left but imperfect connective tissue, and the parts begin to come out. The man who attends an obstetrical case should know how to recognize such lesions and should repair them; or call in some one who can.

I was surprised to hear some one say that perineal operations should all be done in the same way. One class of cases shows good and permanent results with Emmet's operation, another class with Tait's flap-splitting operation. Others require modifications of these methods and a few require other methods. I should regard Dr. DeLee's operation as somewhat serious for the ordinary run of cases. The other methods give good practical results in most instances.

A. Goldspohn: I am glad to have our friend Dr. Price with us. I always esteem his surgical judgment and I certainly admire, as our president says, the results which he achieves with simple technic. I commend very much his insistence on the importance of getting hold of the pelvic fascia in restoring the pelvic floor. We know that the pelvic fascia is closely associated with the levator ani muscle. Sometimes lacerations occur in places where we cannot get at and restore the muscular fiber in the place where it tore and obliterate the exact lesion.

Dr. DeLee has exhibited in his diagram some good, instructive facts in relation to that. It is not always possible to bring out the levator ani. You will all recall the proposition made by M. L. Harris in recent years, which I opposed at the time, and of which I have seen no further advocacy. The fascia remains, however, even though the muscle may tear and recede out of reach. The fascia can be gotten at, but it is not gotten at by the average Tait or Emmet operation, nor any other of the classic operations. The reason for that is largely due to a lack of knowledge of anatomy in the woman's pelvis. Another reason was the absence of reliable absorbable suture material. A German—Schatz—in 1883, correctly pointed out this anatomy and the exceeding importance of the levator ani; and that we should utilize it in restoring the pelvic floor, yet nothing



resulted from the demonstration of this most important anatomic fact, because, as has been explained to me, we did not have catgut that was trustworthy. That looked as if it might be correct.

The next one to take that up in a creditable manner was a young man by the name of Dickinson in Long Island Hospital. He did most commendable work in exhibiting the contracting and lifting power of the levator ani, bringing to our minds most graphically the importance of this muscle. It seemed as if gynecologists must take it up; but nothing resulted until a little man in Chicago about ten years ago published an article in *Medicine*, entitled, "Intrapelvic, Infra-Vaginal Perineorrhaphy Without Loss of Tissue." The same thing was published in the *Journal of Obstetrics* about eight years ago with illustrations of the technic; and I am much surprised that Dr. DeLee is not aware of this work that he calls "The American Operation," going on right in this city and I am surprised that he is not aware of the more recent work of Dr. Barrett on the same subject.

I have been silent on this subject for eight years, because I thought it would seem as if I were "harping on that string" too much. But from what I hear to-night about this operation—that it is not known where it came from, even by Dr. DeLee, and that the Emmet operation and the Tait operation shall do the work, I think it is time Dr. Barrett and I sound the trumpet still louder, so that men like Dr. DeLee, also, may learn.

The fact is the Emmet and Tait operations, as they are ordinarily done, do not get near the pelvic fascia. I will grant if Dr. Barrett or I will make an Emmet denudation, we would search up in the lateral sulci for the pelvic fascia, prove by the pull on the needle hooked into it on each side, that we have it; and we would bring the opposed lateral parts of that fascia together. But the man who does not believe in anything but the old operations will not make the special effort to single out that fascia in that way, and will not really deal with it once in fifty times. The Tait operation has nothing to do with the real holding structure. I have practiced this technic over fifteen years. It was reasoned out on common anatomic grounds. I did that and made no noise about it, because I thought it was a small affair. However, ten years ago I found that these operations of Emmet's and Tait's, that were mostly for cosmetic effect, were creating quite a furore, therefore I decided to ventilate the subject and to describe my technic as before mentioned.

Dr. Joseph Price (closing the discussion): This discussion has been a good deal criticism and a good deal anatomy. You open up a very beautiful field for discussion. The critical allusions of Dr. DeLee as to normal labor being a purely pathologic process or having degenerated into one, I cannot agree with. I devoted ten years to obstetrics and at one time controlled the largest maternity hospital in Pennsylvania. Others following the work of Oliver Wendell Holmes, Semmelweis, Lane, Geo. H. Rohé, of Baltimore and Richardson of Boston, myself and a score of others waged a clinical war on puerperal infection and if there is anything in my professional life I am proud of it is the interest I took in child-bed infections. It has mowed me down four times, and so filled me with bad germs that I have had to quit practicing for a time. It has cost me a small fortune, much suffering. I do not look upon the bearing of children as a pathologic condition. I see too many happy healthy mothers leading society and social lives. I will venture right now that Dr. DeLee has asked women while examining them fifty-two times a year "have you ever had a child?" because there was nothing about that woman that would indicate that she had borne a child, not the slightest injury. I do think, however, that the colleges need a little more enthusiasm on the subject. They seek the chair of obstetrics and then practice gynecology. The professors seek the chair of obstetrics and practice gynecology. I am professor of obstetrics and my specialty is abdominal surgery. Stand on two stools and fall between. In the anatomy and injuries of pelvic structures, two discussions are going on. That of Dr. Geo. R. White on the upper structures and a good number on the lower. The descensus, retroversion, and cystocele, what the obturator fascia has to do with the trouble above—again the pelvic diaphragm or floor, injuries of the levator ani muscle to do with the rectocele—



numerous references were made to the injuries of the levator ani and the anatomic structure below. Emmet long ago went over the structures and injuries, at present under rediscussion. In considering the Emmet operation and other procedures they have always all been thoroughly considered. As I said in my paper I have done as many as three different operations in one Sunday morning, studying most carefully the relative merits of each procedure and results when I removed the stitches, and later. Dr. Goldspohn's inside operation, commonly practiced by a good many Germans, is a variety of terrace suturing of the deepest structures of the mucous membrane and narrowing the canal in its transverse diameter. He narrows the vagina transversely. Dr. Wallace, of Jefferson College, taught that the levator ani rotated the head in its descent. He claimed that that was one of its important functions. We have added its general support of the pelvic floor or lower diaphragm.

I will just use these diagrams which have been made to illustrate the character of these injuries to the structures that give way.

(Discussion at the Board): In examining many cases you can stand off and view the cervix open and badly split. The rectum is commonly to the left. If the opposite were true we would have more injuries than we do. When deeply torn, if you fail to find the slightest resistance the destruction is very great, nothing remaining but the posterior vaginal wall and the anterior rectal wall.

Discussion Using the Diagram: Some few years ago the general surgeons while criticising my (or someone's else) method of using through-and-through sutures, introduced one stay suture. Later they got two, then three, and now I find that most put in five stay sutures. If they will stop their cork-screw or continuous suturing, come down to the very bottom and put in a good stay suture, the stay sutures will be an improvement on their work. In the Emmet suturing we use three or four deep lateral, V-shaped sutures and gather up the entire injured or destroyed pelvic floor, add your second V-shaped and add your third away down again in the left deep sulcus, to the last retracted fiber, close your right sulcus, then the left, the criticism as to what you have outside to do and that you are commonly doing an Emmet operation is a great error. I do not know a man doing good post-partum surgery who is making hymens or fourchets "or thinking about them," except your critics. What they want to make them for is more than I can understand.

Discussion at the Board: In reply to Dr. DeLee I will say that I am glad to see him get off the skin away from the hymen and fourchette and into the deeper structures. You have all, no doubt, seen Noble's criticism of the Emmet operation. He never knew anything about the operation. He did not want to know. He belonged to that unfortunate class of men who would tack Me and My onto everything. If he saw Dr. Ochsner do an operation to-day, before to-morrow morning he would have completely modified it, reconstructed all the instruments and labeled it as his and had it in perfect readiness for publication.

I will admit that my proceeding in the Emmet operation is a modification. I have a delightful letter from Dr. Emmet in my pocket to-night in reply to mine to him telling him that I was going to New York and Chicago. He does not claim as much for the operation as I do.

I thank you for the generous discussion and I am proud to meet you—a class of men who are looking deeply into important subjects like this. I think it is exceedingly sad that we have such an exceeding variety of sad things that can happen in this work.

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## AIDS IN ABDOMINAL DIAGNOSIS \*

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It is obvious that in undertaking the diagnosis of abdominal disease, the various pathologic conditions that may produce symptoms should be

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well known. This must embrace more than a knowledge of surgical lesions and include a consideration of organs outside the abdomen.

1. Diseases of the nervous system such as hysteria, tabes, herpes, etc.
2. Diseases of the spine, especially tuberculosis, spondylitis deformans, typhoid or syphilitic spondylitis.
3. Diseases of the thoracic organs, such as pneumonia, pleurisy, atheromatous arteries and heart or pericardial lesions.
4. Diseases of the blood, as leukemia, malaria, etc.
5. Diseases of the abdominal viscera.

It is hardly necessary to say that the personal and family history is essential to any systematic scheme of diagnosis; as are also thorough inspection and careful physical examination. While we all concede the great value of these, we nevertheless often fail because of the neglect of some one or more of them.

In reference to the physical examination I have found the submerged palpation or palpation in the warm or hot bath, of great value in some cases but have failed with it in others, namely, the nervous, apprehensive patients. I do not know to whom the credit is due for proposing the submerged palpation as I have not seen it in any print except Cabot's Differential Diagnosis.

Pain probably oftener than any other symptom heralds the onset of surgical diseases of the abdomen. Being subjective, it varies with the different nerve states of the individual as in rest or fatigue, febrile conditions, anemia or general debility; and in different persons in similar conditions of health owing to individual susceptibilities.

Patients not infrequently complain of pain out of proportion to any discoverable cause and it is necessary often to determine whether there is simulation or not. The facial expression, the character of the reflexes and especially the blood pressure may serve to guide us as to the probable facts.

Sometimes pain is present with no appreciable pathology and absent in grave lesions, e. g., an indigestion may be more painful than cancer of the stomach or tuberculosis of the peritoneum. As a rule, however, the character and severity of the pain bear a rather definite relation to the gravity of the lesion. As examples may be mentioned the very great prostrating pains due to acute perforations of the stomach, gall-bladder, intestine, appendix or Fallopian tubes and acute intestinal obstruction.

The time relation with reference to other symptoms, as in appendicitis, the relation to taking food, as in ulcer, the various stenoses, the relation to bodily movement or position, exertion, straining, coughing or sneezing are all to be considered. Also the association with pain, of vomiting, constipation, peristalsis, distention, jaundice, or urinary symptoms are important.

The direction and extent of painful radiations and the association with hyperesthesia, local tenderness and muscular rigidity are of the greatest importance both as indications of the site and gravity of the lesion.

The arm pains in angina pectoris, the shoulder or upward radiations in gall-bladder disease, and the downward, forward and testicular pains in nephritic colic are well known examples.

Again, pain may be influenced by psychic, thermic, mechanical, electrical or chemical means, all of which may be utilized on occasion to aid the exactness of diagnosis. Therapeutic agents may also be of value, as for example the use of alkalis or cocain in gastric ulcer, iodids in syphilitic perihepatitis or cathartics in impactions.

The general law obtains that diseased viscera cause pain at or near their various sites; but there are many exceptions, which lend importance to the reflex or referred pains. This applies to both spontaneous and elicited forms. In most visceral lesions there is a disturbance manifested variously by pain, tenderness, hyperesthesia or muscular rigidity of certain areas of the external or protective portions of the body.

Hilton<sup>1</sup> called attention clinically to the protective function of the muscles in joint disease; and later the mechanism has been shown by other investigators to be a reflex. In most abdominal lesions the pain is felt in the abdomen, whether referred through the spinal nerves or directly from the viscera. Pain in the back is also marked in many such lesions. In ulcer of the stomach or duodenum and in gall-bladder disease the pain extends to the back for the most part somewhat above the level of the diseased organ. In pelvic disease the pain in the back is also in evidence in the sacral region. In retroperitoneal abscess, perineal or appendiceal, or in glandular involvement we also find the greater complaint of pain in the back; and especially in the metastatic glandular involvement from testicular cancer.

Pottenger of California has recently shown the motor reflex in diseases of the lung and pleura. Sensory reflex is also recognized in similar conditions. This exteriorization of pain, hyperesthesia or rigidity as a reflex may be of great aid in diagnosis or may mislead one if the fact of the reflex is ignored or the nerve supply is not understood. Clinically increased importance attaches to the reflexes both dorsal and abdominal as aids to more accurate diagnosis.

Reasoning from the demonstration of Haller, Harvey, Lennander, and others, that the viscera are insensitive to ordinary irritative stimuli and incapable of accurate localization of painful sensations; and from the fact of the exalted sensory and motor function of the protective portions of the body, e. g., the abdominal wall, Mackenzie<sup>2</sup> ascribes nearly all the pain in visceral disease to the reflexes; and ascribes the tendency in many visceral lesions to produce pain referred to the epigastrium or other median portion of the abdomen, to the fact that the spinal nerves abundant in skin, muscular and preperitoneal fascial layers of the abdomen have their termini toward the middle line.

The involvement of the solar plexus, of course, accounts in a general way for the more central abdominal pain in various visceral lesions.

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1. Rest and Pain.

2. Symptoms and Their Interpretation.



On the theory that the pain in visceral disease is largely reflex we can best account for the enlarged area of pain, rigidity, tenderness and hyperesthesia occurring in fulminant cases.

Sherrington<sup>3</sup> says: "That in spinal reflexes, increase of the intensity of the exciting stimulus causes increase in the number of motor neurones excited is clearly shown by the wider musculature seen to be engaged as the reflex irradiates under intenser stimulation."

Probably the most severe attacks of abdominal pain are due to the various acute perforations, e. g., intestinal, gall-bladder or tubal. These are associated with wide areas of pain, hyperesthesia and muscular rigidity: in fact the whole abdomen is seemingly involved while the lesion may be limited to a square inch or two in extent.

In cases with broad radiation of pain the behavior of the reflexes under anesthetics or analgesics may aid us in locating the site of disease: as clinical experience seems to show that the marginal pains are the first to disappear under narcotic remedies.

Sherrington (p. 80 as above) says: "Reflexes are nevertheless among the earliest reactions to alter or fail under asphyxial conditions," and "Again the dosage of chloroform or ether required to depress and abolish a nerve trunk conduction is much greater than is required to depress or abolish the cerebrospinal reflexes."

Dr. J. H. Keay in his work on the medical treatment of gall-stones (quoted by Mackenzie) refers to this observation and gives his own experience with chloroform during an attack of gall-stone colic. "Give a whiff of chloroform, not enough to produce unconsciousness and the distant referred pains disappear, their mode of disappearance being very interesting to any one cool enough to observe it, and there remains only subdued pain in the region of the right hypochondrium, a spot so small that one could cover it with the tips of one or two fingers."

In several cases I have noted similar limitation of pain in abdominal lesions exciting broad radiations, by the use of opiates; and I believe we can in some of these urgent cases arrive at a localization in this way most promptly. The muscular rigidity is also influenced in the same manner.

While it is generally poor practice to use opiates in cases with doubtful diagnosis, I believe after carefully noting the character and severity of the pain as well as the areas involved and the extent of the radiations, we may be able in many cases to locate the trouble by use of carefully administered anesthetics or opiates, watching the result in abolishing the pains. This applies, of course, to those prostrating acute attacks in which there is urgent need of prompt diagnosis and relief.

There is another class of cases where we should sometimes wish to revive a latent pain for purposes of localization. Every surgeon is called on to operate on cases referred to him between attacks, e. g., appendicitis or gall-stones, etc. It has been noted that various conditions invite recurrence of pain. In chronic appendicitis or salpingitis, for instance, exercise and fatigue may bring out the pain. Cathartics may provoke anew the pains of appendicitis, and cold excite painful peristalsis in stenoses.

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3. Integrative Action of the Nervous System.



It is assumed that a sufferer from one of these chronic or recurring diseases has a sensitized or irritable nerve tract, or a point of least resistance to pain. In these conditions a shock or fright will sometimes call attention to these latent pains.

Reasoning from the fact that a moderate shock or fright will emphasize a vanishing or latent pain, I have tried the faradic current in suitable cases and in a few cases I believe I have been able more definitely to locate the trouble.

It is not intended here to consider in detail different lesions with their characteristic pain. A great deal has been written on this phase of the subject. The result of the work to date has been a more prompt recognition of appendicitis, gall-stones, ulcerations, intestinal obstructions, perforations and other dangerous conditions, and a great saving of life by early operation.

If we may not always locate a lesion with exactness we can at least often gauge the urgency in a given case by the character and severity of pain and call to our aid such means as are available.

Bearing in mind the reflexes and the diseases of the nervous system we may avoid abdominal section in early thoracic inflammation or diseases of spine or cord or in hysteria. Taking account of the value of pain associated with local distentions and peristalsis, or the absence of peristalsis, we may locate a stenosis or other forms of obstruction; calling to our aid submerged palpation (or palpation in the bath) we may detect induration otherwise not palpable. . . .

Observing the time relation of pain to other symptoms, the effect of food, drugs (cathartics included), cold, fatigue, movement, position, jarring, fist percussion, anesthetics or opiates, or electric stimulation we should be able to increase our percentage of correct diagnoses. "a consummation devoutly to be wished."

The safety of abdominal section may have caused us to relax our efforts at exact diagnosis. If all operations were reported, we should find a rather large per cent. of mistakes. It has happened many times that laparotomy has been done for appendicitis when a spinal or nerve lesion, a movable kidney, pyelonephritis, ureteral stone, typhoid fever, malaria, diaphragmatic pleurisy, salpingitis, mucous colitis, or other conditions were present. Deaver quotes Moynihan in report of forty-nine cases of perforated duodenal ulcer operated on, in eighteen of which a diagnosis of appendicitis was made.

Age, sex, occupation, or previous history may give valuable aid. In childhood intestinal troubles prevail; and we are likely to encounter appendicitis, intussusception, or tuberculosis; in advanced age, malignant disease. In women the pelvic organs are frequent sites of disease, while gall-stones are more frequent; and ulcer of the stomach in the younger, with anemia and dyspepsia.

Lead colic may simulate organic disease. A history of indigestion, with vague epigastric pain, may aid in determining a perforation of duodenum or stomach; and a record of previous inflammatory trouble in the abdomen may explain a sudden intestinal obstruction.

Among the less frequent conditions may be mentioned the meteorism with abdominal pain, resulting from the embarrassed portal circulation in cardiac insufficiency. I have recently seen a case of this kind where the pain was so pronounced and distention so great that abdominal disease or tumor was suspected by one physician.

Excluding pain from cord, spine or reflex causes, we should remember that diseased viscera may be at the normal site, displaced, especially by prolapse, or transposed. We should be awake to the urgency of pain of the first class, viz.: the acute prostrating pain with collapse, such as occurs in the various perforations, acute intestinal obstruction, acute hemorrhagic pancreatitis, fat necrosis, embolism of mesenteric vessels or acute intestinal obstruction; watchful in pain of the second grade for the evolution of determining symptoms, such as develop in appendicitis, gall-stones, or renal colic; while in the third, or subacute, recurring and more vague variety, we should apply such various tests as may aid us in working out a diagnosis. On the surgeon, perhaps, falls the burden of responsibility for exact diagnosis, as his operative experience should add to his knowledge.

Illustrative cases (neglect of general physical examination):

CASE 1.—Miss G., aged 30 years; good family and personal history; rather nervous, well nourished, heart, lungs, kidneys and blood-vessels normal: menstruation regular and normal.

Complained of severe pain "about the heart" on walking a short distance or being on her feet long at a time, with shortness of breath from which she got no relief until she sat or laid down. No pain except in standing or walking. No examination of pelvis. No diagnosis. Consulted with eminent internist, provisional diagnosis pseudo angina pectoris; result from treatment *nil*.

After the lapse of a month pelvic examination discovered uterine fibromyomata; operation; heart-shaped uterine tumors projecting at the cornua so placed that they seemed to compress the iliac arteries. Rapid recovery after removal, with entire disappearance of pain after a few weeks.

CASE 2.—(Neglect of careful personal history.) E. R., aged 8 years; father had gallstones, otherwise family history negative. History of measles, otherwise nothing discovered in personal history.

Began to have pain below right costal margin, with tenderness and slight temperature up to 101 F. Induration after a few days directly over site of gall-bladder, later extending downward and laterally toward median line.

Exploration discovered nodular edge of liver (perihepatitis). Further inquiry discovered she had a rash in infancy following wet nursing and later a keratitis which an oculist in adjoining state treated as a syphilitic, without advising parents. Complete recovery under specific treatment.

CASE 3.—D. C., aged 24 years; good family and personal history except has had digestive trouble especially pain two or three hours after meals, moderate anemia, and was rather poorly nourished. Taken with very severe prostrating pain in abdomen at 5 p. m. Had to be helped to his office. Physician gave opiates. On removal to his home his physician found him still in very great pain, some collapse with very rigid and tender abdomen all over. Repeated hypodermics of morphin made pain endurable. Writer saw him at noon next day, nineteen hours after attack. General abdominal pain, subdued by morphin, pupils small; rigidity and tenderness limited to region over pylorus; temperature, 102.5; pulse, 120. Diagnosis perforated gastric ulcer. Operation, closure of perforation, cleansing and drainage. Recovery despite post-operative pneumonia. This case illustrates the value of personal history and the elimination of general (referred) abdominal pain, tenderness and rigidity by morphin.

CASE 4.—E. H., aged 60. Family and personal history good except past two years had epileptic seizures of unknown cause every few weeks. Began to have severe pain with marked peristalsis in the right abdomen at varying intervals after taking food. Pains grew worse after few days, occurred soon after food and also after cold drinks and was attended by marked distension in right abdomen from the liver to the pelvis. Constipation marked; emaciation; peristaltic waves ascended from pelvis to liver. No tumor could be felt until tried in the bath when a mass was found at hepatic flexure or slightly below. Diagnosis, malignant stenosis of ascending colon, verified at operation.

This case shows the diagnostic value of pain with peristaltic waves and local distention, and of palpation in the warm bath.

#### DISCUSSION

Wm. Fuller: It was my understanding, when asked to discuss Dr. Harsha's paper to-night, that its title was the significance of pain as an aid to abdominal diagnosis; and I presume it will not be out of place to discuss the paper from this standpoint. Pain as an indication of abdominal disease may be so characteristic that by this symptom alone we can reach a diagnosis. Again it may not only be insufficient to make a diagnosis, but may be the one symptom which is responsible for error in diagnosis. To one who has studied abdominal pain it will be at once apparent that many conditions are manifested not alone by pain similar as to character, but by the same localization of pain. For instance perforation of the gall-bladder, stomach, intestines, colon or even the urinary bladder, gives rise to pains having much in common. These pains are uninterrupted, severe and agonizing.

Pains, resulting from torsions of pedunculated tumors, or of loops of intestines are, at first at least, interrupted, paroxysmal and colicky in character, no matter in what portion of the abdomen the twisted structures lie.

I take it that we are not always called upon, in making an abdominal diagnosis, to designate with exactness the location and type of the lesion. Experience has taught that this is oftentimes impossible and that damage to a patient may result if we indulge in too much time attempting a differential diagnosis. It is desirable, of course, to make a diagnosis always before operating, but I feel certain that more often than we would like to admit this point remains in doubt, until the exploratory incision is made. Nor does this seem, after all, a great mistake, when we remember that one thing as well as another may be corrected promptly and effectively at the operation.

To illustrate the difficulty encountered in attempting a differential diagnosis of abdominal difficulties let me present this patient whom I have asked to come here this evening for this purpose. Here is a vigorous, able bodied man of about 30 years of age. About eight months ago this patient, who, previous to this, had always been well, began to have abdominal pain: sharp, colicky in character, lasting a few moments, then disappearing. He was never nauseated and never vomited. There was no tenderness in the abdomen at any time. His pains were about the same, both day and night. Discretion in diet or disregard of this made no difference with his abdominal pains. I made numerous examinations of this patient with negative findings always. Ureteral catheterization on two occasions by Dr. Bremerman afforded nothing that could aid in the diagnosis. Two x-ray pictures were negative and blood-examinations showed normal blood-pictures.

About a dozen surgeons examined this patient from time to time, but no two agreed as to the diagnosis.

Three weeks ago I operated on this man. A compromising incision was made high enough to deal with trouble in the epigastrium, low enough to deal with anything that might be found in the pelvis. Beginning at the cardiac end of the stomach, a close search was made from above downwards to the rectum. The stomach, duodenum, gall-bladder, jejunum, both flexures of the colon and sigmoid, all appeared perfectly normal. No pockets or pouches in the peritoneum which



might have snared a gut or other structure were found; no adhesions, no kinks or anything that suggested a responsibility for the history he had presented.

On lifting up the cecum there came with it the only thing that appeared to justify the operation. A vermiform appendix, about three inches and a half long, free from adhesions, with its mesentery reaching almost to its terminal extremity. The appendix was tense, a little stiffer than usual and presented in its terminal end, which was considerably larger than any other portion of the appendix, a fair-sized fecal concretion. About one inch from this, was another concretion smaller and more firmly fixed in the appendix than the other one. This appendix was removed, the abdomen closed. The patient left the hospital in two weeks and has resumed his work, eating the same as before, without a return of his pain. This patient, whose case illustrates the point intended, which many other similar cases would also do, if detailed, shows plainly the fallacy of waiting too long under many circumstances.

In conclusion I would add a word regarding the interpretation of abdominal pain when this symptom is severe. In acute conditions it may be agonizing in the extreme, and when so, not even rational statements can be obtained from the patient. Such patients should receive a moderate-sized dose of morphin or a few whiffs of chloroform. This is safe and sane treatment and will much quicker clear up the diagnosis than otherwise. To leave a patient to his fate after thus relieving his pain, which may be due to a perforated viscus or other severe and deadly condition, is a serious mistake and should never be committed. After the pain subsides from a hypodermic or from chloroform, the next noticeable change is the return of the patient's reason; he gives an accurate description of the beginning of the difficulty, as well as his condition before the pain began. All referred and reflex pains disappear and the only one left will be the one directly over the seat of the lesion. The administration then of morphin, as urged by some surgeons, is not a factor obscuring the diagnosis; but when given with caution, supplemented at once by a careful examination, is the one *essential* to a diagnosis.

Wm. R. Cubbins: I do not like to take issue with Dr. Fuller, but I do not believe that the citation of one or two cases could have any particular bearing upon the subject under discussion. Many things emphasized by McKenzie and others have been tending to bring us back to the fact that the history has a distinct and reliable value upon which we should place much more dependence.

When it was stated that pain was the fundamental thing and should come first in the diagnosis in appendicitis, it was generally laughed at. At the present time, those persons who considered it ridiculous have been forced to recognize its significance.

This pain is one of the fundamental things in all acute inflammatory conditions. Its radiation can nearly always be traced by its association with the main nerve bundles. Accompany this pain radiation with a point of tenderness and you have two of the most valuable symptoms available in abdominal diagnosis. There is no question or doubt but an appendix normally located radiates to the umbilicus. If it is in the lumbar region, it will nearly always radiate over the outer side of the trochanteric region. If it is attached to the gall bladder, it of course presents a complicated picture, as it radiates to the epigastric and the middle of the back. It can then only be differentiated from the gall-bladder infection by an exploratory incision. Its value as regards the diagnosis of a gastric or duodenal ulcer in relation to the time of taking food and in relation to the point of tenderness that accompanies it, is at the present time considered greater for an accurate diagnosis than the examination of gastric contents by most surgeons.

Of course we know the unusual things like an abdominal aneurism pressing upon the lumbar plexus, upon one or the other side may give an unusual picture and be confounded with the pain radiations of ring colic or acute embolic pyelonephritis. Here, however, the urinary findings must necessarily come to one's aid.



These abdominal symptoms which so frequently accompany *tabes dorsalis* are never accompanied by a point of tenderness and frequently as in lead colic, the abdominal walls are retracted, a thing which is not common in any inflammatory conditions. If you are dealing with the pain of an obstruction which may occur in a diaphragmatic hernia and the abdominal walls are retracted, of course, other means must be used to make a differential point. However, in these the point of tenderness is absent.

I believe that we were driven away from the proper value of pain and tender points in the diagnosis of abdominal lesions by a too great dependence upon post-mortem findings, and that with the advent of accurate surgical diagnoses of abdominal lesions, more weight will constantly be given to the time of the onset of the pain, its relation to nausea, vomiting, or the taking of food and eventually the ordinary man, by making an intelligent use of these will need the laboratory more for corroborative work than to get a line on the chief difficulty in abdominal diagnosis.

Fenton B. Turek: We have always learned so much, as medical men, from the surgeon's work that I think we are ever grateful for research they have made in living pathology. I do not think any one should pay more attention to the methods to be followed in making a diagnosis than the surgeon, because he has a serious decision to make—to operate or not to operate. Where we give a simple prescription, we realize that while it may accomplish results, and we hope it will, it cannot do so very much harm, and so as great care is not demanded though desired. Exploratory incisions are destroying pre-operative methods in diagnosis.

While we wish to get near the surgeon and learn from him, I think it is time we also asked him to learn what modern medicine teaches. There is not sufficient attention paid in surgery to bacteriology, examinations of discharges, or any of the laboratory tests; they do not know anything about it and they do not care, but these are important factors in diagnosis and should be recognized.

In a recent article in *Archiv. Verdauungs-Krankheiten* (February 15) Dr. Strascheske has called attention to the great number of cases where conditions of dilated cecum are mistaken for appendicitis, gall-stones and ulcer of the duodenum. He has given clearly the differential diagnosis. Pain, temperature, locality of pain, vomiting, all these conditions are exactly the same. The difference in the diagnosis lies in the distention of the colon with air and that, combined with the Roentgen ray, is a valuable aid in making a diagnosis, while it is not really necessary.

French surgeons have paid attention to colitis, which simulates appendicitis, and maintain that true pseudo membranous colitis is seldom associated with appendicitis, and operation is contraindicated. As an illustration: Eight years ago a patient was operated on for appendicitis, and the only indication of it was pain. A catarrhal condition was found. I wrote a letter asking for a report of the exact condition, and elicited the information that there was nothing more than a slight congestion, admitting that the operation was of no value. On examination of the patient, I found a movable cecum. A little while ago he went to a surgeon down east, who told him that his trouble was appendicitis and demanded removal of the appendix. The patient told him that he already had his appendix removed. On treatment for dilated cecum and correction of the errors of living, he was promptly cured.

Another case: A lady had an operation for gall-stones. In this case the colon bacilli were highly virulent. One-half c.c. of a bouillon culture killed a rat in eight hours. (If a culture of *baecillus coli* kills a rat in from three to eight hours, it is very virulent. Such a condition could not exist in any patient without causing trouble. I have over 100 cases which I am going to report, in which these conditions are shown, and the effect of the colon bacillus used as a vaccine.) The lady had uterine prolapse and pseudo membranous colitis. It was a very clear case to diagnose, and yet she had passed through the hands of surgeons who, because they had failed to make these examinations, had failed in their diagnosis.

Two operations were performed, appendectomy and a suspension operation, without much benefit. Appropriate treatment directed against the colitis, and especially the virulent bacillus coli, resulted in a cure.

Another case of gastroenterostomy performed on a man who had locomotor ataxia. The patient had had eight operations. He showed a very high degree of virulency of the colon bacillus, which aggravated the abdominal crises.

It is not difficult to treat the cecum, nor is it impossible to control the virulency of the colon bacillus. As much care in making the bacteriologic diagnosis and concern in the appropriate treatment of the intestines, as is now given to the technic of appendectomy, will insure better results.

These points are of importance and must be considered, and surgeons must remember that in all operations, cases of acute dilatation of the stomach may occur and they all show that the bacillus coli plays an important rôle. Many cases of shock are of similar character—toxic in origin. I mention these things because, while I concede great obligations to surgical friends, it is now time that the surgeons also should take into consideration that they have something besides machinery to deal with, and should take some interest in the work done by those engaged in laboratory research.

C. O. Young: Within the past week I have seen a case which has been through the hands of an abdominal surgeon. The patient had a marked case of appendicitis, a gall-bladder full of gall-stones and an umbilical hernia. I wish to call attention to this, that when we speak of symptomatology of abdominal disease we must take into consideration that the patient need not necessarily have but one disease. He may have several, the symptoms of which would overlap each other, therefore the order of the occurrence of symptoms is of far more importance than the emphasis upon any one symptom. In this patient of whom I speak had we diagnosed any one disease and gone into its symptoms and then gone into the abdomen to correct that one thing, found it and corrected it, we should have been satisfied and closed the abdomen without looking further and still not have cured the patient. We could have got a history and symptoms of duodenal ulcer, operated and found it and been satisfied, yet there were four things there and I doubt if the patient could have been cured by operation for any single one of them.

We are asked to pay a great deal of attention to clinical findings and I believe they are of value to the extent that they are in keeping with the other general symptoms. If you have hyperchlorhydria and it is in keeping with the other symptoms, good and well, but should it be that the symptoms are those of gastric ulcer and you should find low acidity, then you should take that into consideration just as you would if you should find acidity in a history of cancer which you would not let interfere with your diagnosis, taking it merely as a coincidence.

I wish to emphasize what has been said by Dr. Fuller as to surgical diagnosis. If you lay your hand on the abdomen you will probably cover the region of the duodenum, the gall-bladder, part of the stomach, the tubes and ovaries and say here is the trouble. We know there may be a good many symptoms pointing to trouble where the hand is lying, and if you are going to try and make up your mind just which organ is sick before you go in or decide to operate, a good many people are going to wait until it is too late. If you can be satisfied from your diagnosis that it is a surgical case, I believe that your patient is entitled to operation without further delay.

In reading of diagnosis in duodenal ulcer Graves states that he makes 80 per cent. correct diagnoses, but he tries to make 100 per cent. correct diagnoses for surgical procedure in abdominal disease, so that when the operation is performed, if a duodenal ulcer is found, or some other condition calling for a surgical operation, you can call your diagnosis correct.

Fenton B. Turek: One other very important point: the cooperation which every medical man should have with surgeons is very essential, for the reason that most of the cases we turn over to surgeons are due to infection from the intestinal tract, appendicitis, gall-bladder diseases, duodenal ulcer, etc. The viru-

lence of the bacillus coli is the real cause of the trouble and all is not done when the operation is finished. The condition behind it, due to the colon bacillus, must be taken into consideration and given attention, or the treatment is incomplete.

V. D. Lespinasse: In looking over diseases mentioned as extra-abdominal there is one branch that should be included; stricture in the male pelvis. It is interperitoneal and when it becomes infected the symptoms simulate appendicitis very closely. This should be taken into consideration in considering abdominal pains in young men.

Wm. Fuller (answering the question of Dr. Senn): There was no point of tenderness at any examination so far as could be determined. Dr. Eismann told me that they discovered some tenderness around the umbilicus. Pressure would bring out some little tenderness, but not enough to really be a feature in making the diagnosis.

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## METASTATIC OPTHALMIA \*

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Metastatic ophthalmia is a name given to a serious suppurative inflammation of the eye-ball that results from an endogenous infection of the internal coats of the eye, the trouble beginning either in the retina or chorioid. The term metastatic suppurative chorioiditis is also used for this condition, but inasmuch as the metastatic process so frequently begins in the retina and not only the chorioid but all the structures of the eye are so frequently involved, the name metastatic ophthalmia is more accurate and desirable.

*Symptoms and Course of the Disease.*—In severe cases the disease resembles panophthalmitis from traumatic or ectogenous infection of the eye. The disease may be unilateral or in severe infections bilateral, although both eyes are not usually affected simultaneously.

The first symptom to be noticed by the patient is a blurring of the vision of one or possibly both eyes. If the physician is fortunate enough to be able to make an ophthalmoscopic examination at this time, he will notice that the vitreous is already slightly cloudy. The outlines of the optic disc will appear blurred and indistinct.

The retinal veins will be engorged, and because of the edema of the retina, tortuous.

There may be slight hemorrhages from the arteries or from the veins, and here and there yellowish-white plaques or masses somewhat similar to those observed in the retina in association with kidney disease or diabetes.

However, owing to the rapid onset, the opportunity of making an early ophthalmoscopic examination does not frequently offer, for within a few hours after the patient has first noticed the dimness of vision the media may have become so clouded as to render such an examination impossible.

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\* Read at the meeting of the Chicago Medical Society, April 12, 1911.



In a day or two (or even earlier) after the first symptoms, congestion of the conjunctival and ciliary circulation will be noticed, and some edema of the conjunctiva (chemosis) will present. The iris will be sluggish to light or immobile, and an ophthalmoscopic examination will show only a faint reddish or grayish pupil reflex. By this time the vision will have fallen so that the patient is barely able to distinguish the light.

Pain of a deep-seated character, and possibly radiating to the side of the head may be an early symptom, increasing with the progress of the disease. In certain cases, particularly of the milder types, the pain may be insignificant or even absent entirely. As the inflammation increases, the edema of the conjunctiva becomes more marked so that a fold of the membrane protrudes between the eyelids. The eyelids themselves become edematous and so swollen that it may be difficult to separate them sufficiently to view the eye-ball. The tissues of the orbit are also distended with the inflammatory edema, so that the eye-ball is pushed forward in a state of exophthalmus, and its movement is limited.

If the case is seen for the first time in this stage, the physician may at first glance think he is dealing with a case of abscess from orbital cellulitis, but the blindness of the eye, and the impossibility of getting a red pupil reflex with the ophthalmoscope should exclude this diagnosis.

The tension of the eyeball is increased from the products of inflammation within it, and the eye-ball may be exquisitely tender to pressure.

The iris becomes discolored and adherent to the lens with synechia. Pus appears in the anterior chamber, and the cornea becomes cloudy and opaque. The pain becomes intolerable, and finally the pus in the interior of the eye-ball escapes through an opening of the sclera which has softened and ruptured usually at the point of insertion of one of the extrinsic muscles, or the cornea may slough and thus allow the escape of the contents of the abscess.

With the opening of the eye-ball the intense pain is relieved, and the severe inflammation gradually subsides after the extrusion of the contents of the bulb.

Then follows a gradual contraction of the sclerotic and what remains of the other structures until the shrunken mass bears little resemblance to an eye-ball. This is the condition of *phthisis bulbi*.

In milder cases, the pain may be much less intense, the edema and exophthalmus much less noticeable, and the cornea and crystalline lens may remain clear so that the physician with an ophthalmoscope, or even without it in a suitable light, may see in the vitreous chamber not far back of the lens a yellowish mass of purulent exudate. Such cases may not terminate in rupture of the globe, but as the inflammation subsides the exudate organizes and ultimately after months or years the eyeball gradually shrinks leaving the condition of *atrophia bulbi*.

The eye is totally blind, and from the pupil which is immobile, though frequently partially dilated, is given back a whitish reflex. To such cases is given the name pseudo-glioma. Such a condition is occasionally seen in young children after some infective process, notably after meningitis, and it simulates glioma of the retina so strongly in some cases, especially when the history is indistinct, that a diagnosis is difficult.



*Etiology.*—Metastatic ophthalmia may develop in the course of various forms of pyemia.

According to a classification of Axenfeld,<sup>1</sup> who in 1894 studied 166 different cases, it occurs most frequently in puerperal pyemia, seventy-six of his cases being of this kind. Surgical pyemia furnished sixty cases, and cryptogenetic septic pyemia thirty cases.

It may also develop in the course of various infectious diseases, such as epidemic cerebro-spinal meningitis, sporadic meningitis, pneumonia, scarlet fever, measles, typhoid, diphtheria, cholera, variola. It has even been reported as occurring in mild form after furuncle from staphylococcus infection.

Because of the more widespread use of antiseptic methods in midwifery and surgery, the puerperal and surgical cases are much less frequent than formerly.

In the development of metastatic ophthalmia the specific organism that excites the inflammation probably lodges in some of the narrow capillaries of the retina or chorioid included in small septic emboli. Virchow<sup>2</sup> was the first to discover such emboli and so to explain the metastatic nature of the disease. These small embolic masses promptly light up an inflammation of the retina which is the cause of the early disturbance of vision.

The question whether the retina or chorioid is first affected by this embolic inflammatory process is a debated one. Axenfeld holds that in bilateral cases the retina is first affected, whereas in unilateral cases the uvea is primarily involved. This is certainly a fine distinction that it would seem difficult to prove. Certainly after the inception of the trouble the circulation of the eye is interfered with by the formation of thrombi in both the retinal and chorioidal vessels. This explains the early appearance of the edema of the conjunctiva and the tissues surrounding the eye-ball.

In puerperal cases the microorganism that most frequently causes ophthalmia is the streptococcus. These organisms easily cause stoppage of the fine capillaries.

The ophthalmia begins most frequently in the first or second week after the puerperal infection, but it may come on after the patient is apparently well, and as late as the seventh week after the infection. In cases where it is so long delayed, there is often ulcerative endocarditis which may account for the infection of the eye. Indeed, endocarditis occurs in more than half of the puerperal cases having a fatal termination.

According to Axenfeld's table, of sixty-nine cases of metastatic ophthalmia occurring in puerperium forty-two were unilateral and twenty-seven bilateral. Of the bilateral cases, both eyes were affected either at the same time or with an interval of only two or three days. In four cases this interval was longer, in one of them the second eye being affected twenty-four days after the first.

1. Axenfeld: *Archiv. für Ophthal.*, Bd. 40, pp. 3 and 4.

2. Virchow: *Ueber. Kapillare Embolie*, *Arch. f. path. ü. Physiol.*, Bd. ix, p. 307.

The number of cases of metastatic ophthalmia occurring from surgical pyemia is much smaller than before the days of careful antiseptic technic. Cryptogenetic infections, however, still furnish a considerable number of these cases.

The pneumococcus, typhoid bacillus, *Bacterium coli*, and influenza bacillus, as also the *Meningococcus intracellularis* have been found in eyes affected with metastatic ophthalmia; but in cases occurring in connection with the various infectious diseases that have been mentioned before, measles, scarlet fever, diphtheria, cholera, etc., there is usually a mixed infection and probably some of the pus-forming organisms are the real cause of the suppuration in the eye.

A peculiarity in cases developing in the course of meningitis is that they are of a much milder character than those caused by other infections. It is this class that frequently furnish in children the cases of pseudo-glioma.

*Prognosis.*—An important part of the subject is the prognosis, not so much for the eye which is usually lost, but for the life of the patient who suffers from metastatic ophthalmia. As to the eye, even if it escapes destruction from the suppuration, it is totally blind. A few rare cases have been reported in which a small degree of sight remained after the subsidence of the inflammation. Usually, if the patient survives he has a shrunken, useless eye-ball, which may have to be removed.

The danger of sympathetic disease of the sound eye is not so great in phthisis bulbi, i. e., one in which the contents of the ball have been extruded in the suppuration, as in atrophia bulbi, in which the ball has not been ruptured, but in which the contraction of the organized exudate causes shrinking of the bulb. These latter may be dangerous and should be removed.

As to the life of the patient, the prognosis, in case of metastatic ophthalmia occurring in any infectious disease, is grave, especially so if it is bilateral. Many of them die. The mortality ranges from 21 per cent. in the unilateral to 85 per cent. or more in the bilateral cases.

In puerperal pyemia the mortality is even higher than that given, being from 55 per cent. to 65 per cent. for the unilateral and 85 per cent. or more for the bilateral cases. In the unilateral cases death occurs in from one to eight weeks after the onset of the ophthalmia, whereas in the bilateral cases it occurs earlier, sometimes soon after the involvement of the second eye.

In surgical pyemia the mortality of the bilateral cases is also great, 75 per cent., while 50 per cent. or more of the unilateral cases succumb.

The mortality is less in cases in which metastasis occurs in the eye alone; but if metastatic processes exist in other organs as well, it is great, even as high as 85 per cent.

In cryptogenetic septic cases the mortality is about the same when the ophthalmia is bilateral, but is lower when unilateral, recorded cases showing about 83 per cent. for the former and 33 per cent. for the latter.

Metastatic ophthalmia therefore is of serious prognostic import in any infectious process, and would seem to be an index of the general infection.

*Treatment.*—Little can be done in the way of treatment except to alleviate the suffering of the patient. Hot compresses, cocain applications and leaching the temples may give some relief. When it is clear that pus is in the eye-ball, and that panophthalmitis is inevitable, the eye-ball had better be incised to allow drainage. Evisceration of the contents of the globe may be done at the same time or later according to the condition of the patient. The question of enucleation of the shrunken eye-ball will have to be considered at a later time if the patient survives.

122 Michigan Boulevard.

#### DISCUSSION

Dr. Colburn:—This subject has been so very thoroughly and ably covered by Dr. Wilder in his paper that it is almost impossible to add anything of importance. My personal experience with cases of this kind has been somewhat limited, but I think even a very limited experience gives one all the practical knowledge that he wants personally.

The severe onset of the disease has been my observation—severe pain, severe ophthalmic symptoms and almost invariably in puerperal cases the cerebral symptoms come in within four or five days. I have records of four cases seen in the last few years where the cerebral symptoms appeared in one case the second day, in another case the fifth day, and the disease ran its course very rapidly. One patient died on the twelfth day, showing that there was probably other involvement—that the brain had already invaded at the time the eye symptoms appeared.

Mistaking a pseudoglioma for a glioma is not infrequent, particularly when the condition occurs in children who have had infectious diseases. I have seen perhaps half a dozen cases or more where I advised enucleation because the diagnosis without was impossible, and in some of the cases I have found that it was a pseudoglioma—an infection that occurred during the diphtheria, or some like disease, which had occurred some months previously. I recall now three cases of that character. The removal of the eye, however, by enucleation was the safest thing to do, as we could not make a positive diagnosis, and the age of the patient and everything tended to indicate that it was glioma, and the only safety was enucleation.

Just before the meeting I brought to Wilder's attention a history of a case of enucleation done something like twenty years ago. The patient, now a woman, was in the office some days ago. The question at that time was whether it was pseudoglioma or glioma. Microscopic examination made by Dr. Wilder showed it to be glioma. Recovery and the non-recurrence of a true glioma is so rare that it is a matter of comment.

Dr. Lorenzo H. Grosvenor:—I have brought three jars of eyes with me that I have prepared in the laboratory at Rush. One, the phthisic globe, was such a case as Dr. Wilder has described. This was an operative case which became infected and filled with pus four days after the operation. While it had free drainage, it went on to this shrunken condition when the globe, which you see, was enucleated.

Another shows the globe completely filled with blood and pus. If you look closely you will see the lips of the wound in the cornea. The other one is full of glioma, showing how completely it will fill the globe, crowding the lens and iris forward to the cornea.

It is always advisable to cut back on the optic nerve. I have seen somewhere the optic nerve was cut back half an inch and still there was glioma at that point. These glioma cases are always in children, and on enucleation you must take out as much nerve as possible. In two cases I have examined there was glioma extending back more than half an inch, and in such cases it is sure to have gone into the brain.

In one case, a little colored boy, the eye with glioma was enucleated, and two months afterward the orbit was entirely filled with glioma which was rapidly



working its way back into the brain and its membranes. Some weeks later the orbit was eviscerated—cleaned out—and still it went on until it finally reached the brain and the child died in eight or nine months after the globe was enucleated.

I recall an interesting case of a woman who had had an abortion and almost immediately afterward a septicopyemic infection set up in her entire body, affecting the heart, joints and all parts of the body. Inside of three days after the abortion was performed both eyes filled with endogenous pus. The first eye—the worst one—was eviscerated, i. e., the contents were cleaned out. It was thought that this would give the second eye a chance to clear up if possible. In three months it became so bad and so painful that it was enucleated. This shows one of the wicked sequelæ of abortion work. We know not what minute or in what case it will appear.

This paper has been of great interest to me and will, I am sure, be of interest and profit to others.

Dr. Oliver Tydings:—I do not know that I can add anything to this paper, which I have greatly enjoyed. Dr. Wilder has said all there is to be said, and that is: that it is the local expression of a constitutional infection.

The only suggestion I have to offer is an idea advanced by Flexner, I believe, in his investigations of meningitis, viz., the use of hexamethylenamin in these conditions along with the salicylates. I have, however, had no experience. The only cases I have seen were those where the destruction had run its course, and the only thing I could do was to enucleate.

In some cases the differential diagnosis between this condition and glioma can only be settled by the microscope, yet generally glioma presents the creamy appearance (not the look of old cream) that metastatic abscess does, which presents a rather darker appearance, and yet it is sometimes extremely difficult to say what we have.

Dr. William H. Wilder (closing the discussion):—One feature that I wanted to bring out in this paper particularly, which seems to have been rather overlooked in discussion, is that of prognosis. This feature of the subject makes it of interest not only to the specialist, but especially to the general practitioner and the surgeon, because they encounter them more frequently than does the ophthalmologist. This condition may come on in the course of *any* infectious disease. It may come in an individual with diabetes where the nutrition is impaired and they have endogenous infection from some obscure source. Recently I was called in consultation on a case which evidently had been caused by bacillus coli, evidently from an old cystitis from which she had suffered years before. With a lowered vitality she got a general infection which infected first one eye, later both, with a fatal termination.

So that, as an index to the gravity of the infection, its occurrence should never be overlooked. When severe inflammation gets in one eye, careful attention should be paid to the differential diagnosis. If metastatic ophthalmia is present it will always have an important bearing on the prognosis.

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## SOME PECULIAR CASES OF HEART DISEASE TREATED BY SURGERY \*

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CHICAGO

*SYNOPSIS.*—*Medicine has neglected the diseases of the later decades of life. Heart breakdown without disease of the coronary arteries is an unrecognized and neglected condition. The symptoms are such as to bring the patient to the physician, and the history and the physical find-*

\* Read before the North Central Illinois Medical Association, at the thirty-seventh annual meeting, at Peru, Dec. 6, 1910.

*ings are sufficient for a relative diagnosis. The treatment is well indicated and safely instituted. The recoveries are gratifying and often almost miraculous. A time comes when an unstable equilibrium is established and no treatment can rescue the patient.*

The conquest of disease has done much to diminish the death-rate and more to eliminate morbidity in the early decades of life, but little has been accomplished in staying death or diminishing the sufferings of the fifth and subsequent decades of life in which the flower of ripe experience in council and wisdom alone can be expected. For these reasons any suggestion which can offer surcease of woe at the most critical and at once the most useful and fruitful period of life, is doubly welcome.

There is a heart breakdown which comes on at 45 or later, most frequently seen in men, but not exceptionally in women, generally without any valvular lesion, and progressive in its course to so serious an incompetency that life itself is threatened.

In the early stage the symptoms are tachycardia, intermittent and irregular pulse, palpitation, dyspnea and attacks of indescribable sub-sternal distress. The dyspneic attacks in one young patient (35) were frequent day and night, with and without exercise. In one man of 55 they came on at first at 2 or 3 in the morning after a sound sleep, and were so severe and protracted that he had to sit up the rest of the night, but after a few months they came on as soon as he had dozed a moment, and sleeping recumbent became impossible. In one woman of 50 the dyspnea and palpitations had resting periods of months and then succeeding months of great distress confining her to bed. One man of 50 (after twenty years almost symptomless) suddenly broke down and fell in the street quite unconscious and was never again able to walk a block without resting. One man of 55 became suddenly dyspneic, and in three months had such incompetency that his liver was enlarged, his abdomen and chest filled with fluid and he was unable to lie down for a moment.

The subjective symptoms are innumerable. They are all connected with the sensations about the heart and its activities, about the oxygen hunger and about a vague and fearful sub-sternal thoracic discomfort or distress, distinctly paroxysmal, and often unaccountable in its onset. One man, aged 72 years, who has led a most active life in the great undertakings of the world, had his first paroxysm in his office sitting at his desk dictating his morning letters. One patient had periods of uncontrollable drowsiness and then started awake with palpitation. Severe pain in the chest and even the shoulders and arm was complained of by two of my patients. Nausea has been little complained of because its answer, vomiting, gives relief. One of my patients with a paroxysm of tachycardia, pulse 160 +, became nauseated on attempting to swallow a little ammonia and water, and on vomiting the paroxysm disappeared and the pulse came down to nearly normal. She used the remedy several times afterward with similar results.

In the early stage, which may go by unrecognized or may be troublesome for months or years, the physical findings or objective symptoms are sufficiently positive. 1. The irregular intermittent pulse without high

blood-pressure. The pulse is often 60 to the minute, intermitting every third to seventh beat, quite irregularly. In other patients the average is much higher, 120, and occasionally palpitation of an irregular and intermittent sort, during which there is an indescribable substernal distress. 2. The area of cardiac dulness is distinctly enlarged, the apex lower and farther to the left than normal. 3. The skin is not clear and is generally marked on the hands and face and frequently on the chest with pigmented spots—liver spots. The sclera is subicteric and the *panculus adiposa* is soft and flabby. 4. The most uniform finding is the Riedel lobe, an enlargement of the liver immediately over the region of the gall-bladder. At a later stage the heart becomes incompetent, the whole liver becomes enlarged and presents the symptoms of cirrhosis and Riedel's lobe becomes lost. 5. There is rigidity of the right rectus and tenderness over the gall-bladder, but this is so relative a finding that it must be cautiously considered. 6. There is an area of hyperesthesia 4 or 5 inches long and 3 inches wide over the middle of the ninth rib and under the point of the scapula. This is Ewald's area of hyperesthesia, and is elicited by the scratch of the finger-nail, a dull pin or the point of a pencil. 7. The blood shows diminished hemaglobin, slightly fewer red corpuscles and a moderate increase in the white corpuscles, 12,000. 8. The urine contains no conspicuous warnings. The more delicate tests show an increase in coloring matter, indican and bile pigment. The nitrogen is diminished generally on account of inanition, but is often enormously increased. After each severe attack there is albumin in the urine and some casts, and the amount is then considerably diminished. In one case there was almost complete anuria for three days after a paroxysm. 9. Many patients present distinct transverse ridges across the nails which I have interpreted as representing periods of diminished or increased nutrition. The nails of both hands and feet show these ridges in many recurrent diseases. 10. The tongue is generally thick, marked by the teeth and coated. The mucosa of the mouth shows diminished aeration of the blood.

This symptom-complex is not as well drawn as I could wish, but it is the most accurate my experience permits. The later manifestations of the toxemias which are to follow are more definite, and they are the key to the situation, but unfortunately their appearance means that the day of cure is about past.

In the second stage of the disease there is a flood of symptoms in which those due to cardiac incompetency are most conspicuous. The objective findings are the most positive. 1. The heart becomes enlarged in one case to a breadth of 9 inches and valvular murmurs appear. 2. The liver becomes greatly enlarged, covering up in some cases the Riedel lobe. 3. The peritoneal cavity and even the pleural cavities contain large quantities of fluid. 4. A subicteric or cachectic color comes on both skin and conjunctiva. 5. There are frequent paroxysms resembling angina pectoris in many particulars, but often relieved by vomiting. 6. At autopsy the heart is found with perfectly normal coronaries, but with a marked myocarditis. In a few instances this process goes on to a brown



atrophy of the heart and arteriosclerosis of the large central blood-vessels.

The heart breakdowns are secondary to cholecystitis. In every case where an operation has been permitted the diagnosis has been sustained. Less than half the patients had gall-stone, but in all the gall-bladder was greatly thickened. In one the contents of the gall-bladder was pus. In no case that has been examined by the hospital pathologist have any bacteria been found.

The treatment consists in a rapid cholecystostomy with ether or a local anesthetic. Any protracted operation is fatal.

Of more than thirty cases operated on the limit has been twenty minutes from the beginning of the anesthetic to the end of the operation. All my patients are alive except five. One died on the table, a man 72 years old, with gas anesthesia. The duration of the anesthesia was less than ten minutes. One woman of 36 died suddenly and unexpectedly twelve hours after the operation. One man of 64 died on the operating table when he was subjected to a second operation undertaken by another surgeon on a mistaken diagnosis. I had the opportunity of making an autopsy on this man and found his coronary arteries normal. One man who made a most complete recovery after the heart was dilated to 9 inches transverse measurement, died four years later of an incompetent and overstrained heart due to exposure in a storm on Lake Erie and a neglected bronchitis. One man was so dyspneic that I operated on him in a sitting position with local anesthesia, and after being relatively well for two years he fell ten stories in an elevator and died of heart failure within three months. Several of the patients on whom I have made a diagnosis and recommended operation have not returned to me; several have consulted other surgeons, who refused to operate. One of this number underwent a protracted operation with unexpected endurance and then died of sepsis.

The pathology of this condition is somewhat conjectural. Nearly all experimental work is based on clinical experience and on the theoretical pioneering of physicians who are the scouts of exact pathology. I am therefore not too modest to give my account of this disease.

The patient is generally a well-fed and hearty person who gives the history of having acquired a mild infection of the gall-bladder from an injury (four cases), from a food poisoning (two cases) or as the result of a severe sickness (two cases) many years before (three to twenty). During that time the symptoms are generally trifling disturbances of digestion hardly worth noticing, or these symptoms are punctuated by sharp attacks of abdominal distress.

During all this time the wall of the gall-bladder is growing thicker and thicker and its glandular elements are becoming enormously hypertrophied. The secretions of these glands furnish the source of the toxin. The reaction of the patient to this poison results in an increasing susceptibility to it. In some unknown way it manifests a selective action on the heart as lead does on certain nerves in wrist drop. At a time of great anaphylaxis the symptoms tachycardia, dyspnea and substernal distress begin.

The fact that no microbes have been found in the fluid taken from the gall-bladder does not deny their presence there.

Hemolytic studies seem to confirm our opinion of the venomous condition of this content and promise in the near future another method of diagnosis.

The condition of the gall-bladder in about half the cases without stone and the greatly thickened wall of every one and the recurrence of symptoms on early closure of the fistula and recovery on its reestablishment all make the positive relation between the gall-bladder and the myocarditis unquestionable.

Only two autopsies have been made on my patients, one on a woman aged 36 years eight years ago. She died suddenly twelve hours after operation. The findings were those of brown atrophy of the heart and central arteriosclerosis. The second autopsy was on a man aged 65 years who died after an unindicated operation. The coronary arteries were intact and the myocarditis was typical.

The condition of the heart is one of myocarditis and so far as the muscle is destroyed no regeneration can be expected. The local complications of the gall-bladder disease are the same as those found in ordinary cholecystitis. In one case the stone was already pushed through the mucosa and muscularis and lay in a diverticulum of the serosa. In one case the wall of the gall-bladder was a centimeter thick and its cavity about as large as the core of an apple. In two cases symptom-bearing adhesions existed between the fundus of the gall-bladder and the pyloric end of the stomach.

I will briefly record two cases in which operation has been successful, both recent and hitherto unpublished. They present quite different stages of the disease.

Miss D., aged 36 years (or older), was a teacher of large stature and perfect development. She had typhoid when a child or some other sickness confining her for a long time to bed. The menstrual history was normal until the last three years during which menstruation was irregular and often scanty. There was a history of slight stomach trouble that made her careful as to diet. Three years ago at Las Vegas, New Mexico, she began to have palpitation, irregular pulse and dyspnea which were attributed to the high altitude. A year ago she was obliged to leave her school for several months and go into a sanitarium for rheumatism in her shoulders and chest. I operated in September and she went to work in three weeks recovered from the dyspnea and rheumatism.

H. T., aged 54 years, was a well man until November, 1909. He weighed 180 pounds, was five feet six inches tall, and had led for many years an active life in the open, often on horseback two to six hours a day. He was always a good feeder, rising before 6 every morning and eating a breakfast of coffee, eggs or bacon and taking a light lunch at noon and a big dinner at night. He was a man of large business, quick decision and even temper. In November, 1909, he had a shortness of breath and cough that led him to call a physician. Some cough medicine was given and the patient directed to remain at home. He went to business the next day but soon became worse and called another physician who at once had consultation. The patient was said to have cirrhosis of the liver and treated accordingly. During January and February he was in the South but he was miserable, dyspneic, dyspeptic and lost weight. His abdomen now began to increase in size and on returning he had two prominent men in consultation who made the diagnosis of cirrhosis of the liver and he was tapped twice. His ascites

was considerable and in June when he came under the care of a colleague he had an effusion in his right pleural cavity. He was put on laxatives and heart stimulants and the fluid withdrawn from the right chest. In July he was considerably better but obliged to sit up most of the time. The liver could now be palpated and the Riedel's lobe and underlying tenderness readily made out. The heart was enlarged, quite irregular and rapid. The dyspnea was moderate. Cholecystostomy was performed with gas ether anesthesia, all inside of five minutes, no ligatures, two stitches in gall bladder and abdominal wall and one in tube. The patient was immediately set up in bed. Inside of three weeks he left the hospital and two weeks later went to California. He is now back at work at his business.

The gall bladder contained no stones. The wall of the gall bladder was about as thick as the urinary bladder.

#### CONCLUSIONS

1. There is a special form of toxemia due to disease of the gall-bladder which acts on the innervation and musculature of the heart and results in heart breakdown.

2. This condition is most often observed in the fifth and subsequent decades of life and is frequently mistaken for angina pectoris.

3. The objective findings are adequate for the diagnosis in the early stages of the disease but become clouded by overshadowing symptoms due to more complete heart failure as the disease progresses.

4. Rest and symptomatic treatment will sometimes bring the patient back to a condition in which the diagnosis can be made and curative treatment undertaken.

5. The cure consists in removing the sources of toxemia by draining the gall-bladder for several weeks.

6. When the symptoms recur drainage must be reestablished.

7. In my experience no error has been made when the positive diagnosis had been followed by operation.

8. Even in the second and last stage of the disease several patients have been restored to relative and apparently perfect health for several years at least.

9. The operation must be performed rapidly and with the least possible traumatism.

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#### A STUDY OF THE VALUE OF PSYCHIC INFLUENCES \*

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When we are disposed to be too materialistic in our view of bodily conditions and functions, we are probably wrong. When, on the contrary, men are disposed to ignore the body, they are likewise, to say the least, impractical. The fact is, there seems to be only one class of men which looks on the subject in a well-balanced way, and that is the intelligent physicians. One man who was probably more learned in the psychic than any other of the immediate past is authority for the statement that physicians were the discoverers of the fundamental facts of the science

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of mental medicine. They long ago found that one part of the mind controls the bodily functions, and in turn is largely under the influence of the other part of the dual mental organism. He mentions Dr. Hack Tuke's great work on "The Influence of the Mind on the Body," and Pitzer on "The Placebo," in which he names this standby the "larvated suggestion."

He speaks of these facts in proof of his claims, and it is appropriate to observe right here that Professor Hudson was not a physician. He does not claim, however, that the physicians formulated the law of mental medicine, but that they discovered the fundamental facts. Columbus discovered America, yet he died in ignorance that he had discovered a new continent.

This fundamental fact has been known for a long time, "that the mind controls the bodily functions," yet mental science did not make much progress, inasmuch as the law of psychic phenomena is the only sure ground on which to hope for advancement. This law has been but recently formulated. One author, who deserves to be believed, says "that it is only within the last decade that the wonderful powers and limitations of the primary intelligence are becoming appreciated"; and further, "The new science has traced the mental power that heals, and to its limitations, i. e., of the science, is due all that is mysterious in its phenomenal manifestations in the domain of mental therapeutics and all other classes of psychic phenomena."

That the limitations and mystery of the mental power to heal depend only, and alone, on the objective intelligence is one of the boldest statements in literature. That the subjective or subliminal mind is omnipotent to heal, and is only fettered and bound by the ignorance of the supraliminal mind, is a heroic thing to say. But we must remember that we are in a day of rapid changes, and if we cast a few reflections it helps our skepticism.

A few years ago, who would have believed it possible for a man to converse with another a thousand miles away? Now more than this has been accomplished—now intelligence even travels without wires. The time was, not so long ago, when men walked, or traveled on horseback, and now a force which we cannot see, and no one can really explain, carries our messages, and lights our cities, does the work of industries, and carries us to and fro.

Now, when they tell us of the wonderful, limitless power of the subjective mind, *per se*, and under the efficient stimulus of the objective mind, it looks like moonshine. But many things are facts to-day, which in the not distant past were visions thin as air. So we cannot be too decided about it. It seems that we are dependent on unseen forces more and more as time goes on, even in the plain affairs of the world. The asylums and penitentiaries are fast losing their material means of restraint and methods of correction, and coming to depend to a larger degree on the psychic or mental and educational to control their charges.

There is also no doubt of the tendency within the medical profession. While medical means are of undoubted utility in many instances, the profession is departing from the absolute material standards of the past.

We cannot gainsay it—we are coming to recognize law more and more, both mental and physical. It is now held by leading psychologists that every cell in the body has an intelligence of its own, and is related to a great central intelligence. Each cell knows what to do for itself. It has the inherent intelligence to superintend its own nutrition, its secretions, excretions, and functions, whatever they may be in particular. These intelligences are in direct communication at all times with the central intelligence, or subliminal mind. The subliminal mind never sleeps, but constantly directs and controls the federated functions of all the cells in the human body. Is the central intelligence which presides over the sympathetic nervous system merely a sum total mind of all the cells, or is it a distinct entity?

That it is a distinct entity; that it is really the spirit in man, seems to be the view at present universally accepted. It appears that no science makes practical progress until the formulation of the law on which the phenomena are based, has been stated. Modern psychology is no exception. It now has the law, and it may be stated according to the following propositions: First, man has two minds, the objective and the subjective. The second proposition is that the subjective mind is constantly amenable to suggestion. This may be either autosuggestion, or that from outside sources.

The objective mind represents the five physical senses.

The subjective mind is absolutely incapable of inductive reasoning. That the subjective mind cannot reason and is capable only of deductive power is plainly in evidence when the objective mind has been dethroned by hypnosis. Then the mind accepts anything offered, almost in a lump sum. The mind with which we think and hear and see, demands facts, verified and classified. If they are sufficient, it then forms general conclusions. This is inductive reasoning. But the subconsciousness readily accepts conclusions, in a deductive manner, taking it as a matter of course that supporting facts do exist.

The subconscious mind has practically a perfect memory. We all realize this to be true. Many times with objective exertions in the extreme we cannot bring back information which we know we possess. Mental activity fails to bring it back, but sometime, in a relaxed and passive state, the subconsciousness yields it up to us again. This generally occurs after the most active efforts at recall have ceased. It just pops into the mind. The name of a friend in college, years ago—where was this impression all this time, and so perfectly preserved?

Third: It is the seat of the emotions—self-preservation, reproduction, preservation of offspring and religious worship. We all know this to be true. The objective mind is developed on account of our physical needs and representing the five senses. No, if we had to depend on that mind for self-preservation we probably would not be preserved very long, and we daily see the atheism engendered by the inductive reasoning process of the mind whose function it is to serve the five physical senses.

In discussing psychology even from a medical point of view, it is impossible to ignore the religious relation of the subjective mind, and for

this reason I feel justified to make the following statement. It is not possible for any man to know the Supreme Being by inductive reasoning, on account of the fact that the inductive, objective mind is the servant of the physical body, is representative of the senses, and is not of the spirit.

Another important consideration is that the subjective mind controls favorably all the functions and sensations and conditions of the body, when not adversely influenced by the objective mind.

There are several other functions of this mind which never sleeps. It never does wrong of itself. It is only as it is unduly influenced by the physical mind that it ever turns from the paths of absolute rectitude. It cannot sin—it is the spirit—it is the life—it is the pneuma—and I believe the inspired Word nowhere states that the spirit will ever die. It returns whence it came. But the “soul that sinneth it shall die.” That’s a different thing. That is the objective mind. That is the individual, the person, the identity. “And may your spirit, ‘pneuma,’ and soul, ‘psychos,’ and body, ‘soma,’ be preserved entire.”

So the soul and spirit are two distinct entities, and the distinction is everywhere plain in the Greek. And the immortal spirit within us is the subjective mind, which presides over all the functions of life. And it is interesting to note that according to a definite plan, even the mortal soul or objective mind may take on immortality and remain the companion of the spirit in future life—preservation of personal individual identity.

The study of the psychic is in no respect more interesting than in connection with the great work by Professor Pawlow in his laboratories in St. Petersburg. The scientific world has not witnessed anything more valuable than this great scientist has done in the work of the digestive glands. He has done work so accurate, and so extensive, that it can be truthfully said, nothing of its equal has ever been accomplished or even attempted. In a cold, matter of fact way he has proved in his laboratories by repeated animal demonstrations that the psychic is of primary importance; in fact, the very foundation of the work of the digestive glands.

For example, in the experiments first made with the greatest exhaustiveness in the laboratory, and afterwards, again, together with demonstrations before physiologists comprising the Institute of Experimental Medicine, and later in the Military Medical Academy, many astounding facts were brought to light. The first step in the digestive process does not furnish an absolutely complete demonstration of psychic phenomena, but it falls short only in one particular. The fact that the salivary secretion of the canine contains ptyalin in minute quantities only, makes the observations somewhat incomplete in the study of this particular ferment, when comparing its physiologic and psychologic production, which also furnishes an accurate estimate of the salivary gland stimuli. The experiments with reference to the salivary glands are carried on without any considerable previous surgical preparation, so it is always done in practically the normal animal, and it is always found that all the phenomena of adaptation attendant on the actual presence of mechan-



ical and chemical stimuli within the buccal cavity, are exactly reproduced under the influence of psychologic conditions. Permitting strict physiologic conditions to prevail, and placing in the mouth of the animal the food or the sand or pebbles, and then measuring the salivary secretions in the most reliable manner, it is uniformly found that the identical results are produced through psychic stimuli, guardedly alone. Thus, sand really administered yields a profuse watery salivary discharge, and a mere pretense to administer the sand gives the same results. The administration of various kinds of food causes the salivary glands to yield a more mucous secretion, and the same articles merely proffered, produce the identical results in all respects, both with regard to quantity and quality. In short, whether the various foods or other substances are actually introduced into the buccal cavity or are merely presented in an effectual manner, the results so far as the secretions of the salivary glands are concerned are in perfect accord.

In the psychology of the salivary glands all the elements of mental activity are displayed, those pertaining to the subjective as well as those relating to the objective mind.

Thus it has been demonstrated by Dr. Glinski on a canine with double parotid and submaxillary surgical fistula, that it is not the desire alone which governs. In both the psychologic and physiologic tests it is found to make a constant difference, whether the meat is finely powdered and dry, or moist and in lumps, or whether the bread is moist or dry. So it is not taste nor the suggestion of taste alone which acts as the stimulus. Taste is one of the five representatives of the objective mind, but here we have a stimulus of psychic character which does not depend on taste; in fact, in the case of dry sand, it has no relation whatever to taste; yet the gland fistula supply the test-tube with equal secretion, in the actual introduction into the mouth, and in the effectual suggestion thereof.

The definite psychic influence on the salivary glands is therefore of great significance, and Professor Pawlow states that he can see no reason why the same should not apply to the other organs of the body.

Indeed, he says that it is by the means of such unconscious impressions that the usual physiologic processes of our bodies are guided.

His experiments in relation to the gastric secretion are equally strong and clear in proof that it is mainly of psychic origin. By the use of a dog with ordinary surgical gastric fistula and also a divided esophagus, he makes his demonstrations. The mouth is entirely cut off from communication with the cavity of the stomach. The stomach is washed out before the experiment, and no fluid escapes from the fistula. The animal is given food and eats with a relish but it all escapes at the esophageal opening in the neck. This is sham feeding, and after it continues for five minutes, perfectly pure gastric juice appears at fistula, to extent of 20 c.c. in five minutes more, and as much as 700 c.c. of the purest gastric juice in about six hours of sham feeding.

The inference is plain, and it is fair to make it, viz.: that the secretion is due to psychic influences. It is in this manner demonstrated most positively, and afterward in the most effectual negative manner possible.

Taking an animal prepared in the same way, as for sham feeding, and submitting its stomach to all manner of mechanical excitation by means of the classic feather and strong glass rod, through the fistulous opening, for a period of one-half hour; after all this irritation the red litmus paper shows only the blue reaction of the moisture from the alkaline, mucous membrane, and the blue litmus shows absolutely no reaction of any degree. Then, in order to show the absolute normality of the animal, turning at once to sham feeding, secures 150 c.c. of normal gastric juice in thirty minutes.

Sham feeding, however, also has its negative results wherein it fails to create a high degree of gastric secretion. This occurs when the pneumogastric is surgically divided. Doubtless the vagus fibers arising from the anterior part of the medulla may suffer division without interference with the secretion. But it is now known that the vagus has more than motor significance in the stomach. It has specific secretory fibers also, arising in the floor of the fourth ventricle. That they are specific, and not vasomotor only, is proved by the intelligence and nice discrimination with which the gastric juice is adapted to the particular kind of food given in sham feeding, in which process the food does not reach the stomach at all. Nor does it seem reasonable to regard the stimulus other than mental, since it comes from a special nucleus in the fourth ventricle, the very seat of the subconscious mind. That the vagus also has inhibitory fibers to gastric secretion is proved, inasmuch as excitation of the sciatic nerve for three minutes brings gastric secretion to a standstill for several hours. This inhibitory influence is manifestly reflex in character, and the switch-board is in the medulla.

Another very interesting experiment is one in which it is demonstrated that food introduced direct into the stomach fails to act as a secretory excitant. The comparative study of two animals surgically prepared in the identical way proves this. The digestive progress in the one is very small, while in the other, in which sham feeding is a supplementary procedure, the digestion is vigorous. So it is plain that the benefits derived from the practice popularly known as "Fletcherism" are not due in the main to comminution of the food, nor indeed to the incidental alkalization of the acid food, nor the saccharin elaborations, nor, in short, all of the chemics or mechanics of buccal digestion combined. The prolonged mastication develops all taste properties of the food, and it becomes appreciation. Appreciation recorded on the special nucleus in the medulla becomes the stimulus which is conveyed by the special vagus fibers to the secretory glands in the stomach. It seems reasonable, too, to expect this process to exert very favorable influence on all subsequent metabolism. The far-reaching benefits from rational "Fletcherism" are consequently a logical effect.

It has been found that without this appreciation many forms of food-stuff which gain entry to the stomach remain wholly devoid of gastric juice. Some do excite a little secretion, but it is scanty and weak.

Now, as to the pancreas. What is the excitant? Acid secretion from the stomach. It acts on the pancreas either as a local excitant on the

peripheral end-apparatus of the centripetal nerves in the mucous membrane, or by absorption into the blood. This is not surely known. But one thing is definitely determined, that the exciting stimulus of even the pancreas is of psychic origin, and that a pancreatic secretion commensurate with the requirements is produced, providing the psychic conditions bearing on the previous processes in the alimentary tract have been favorable. This much is certain, regardless as to whether it is the acid direct or its intestinal products, pro secretin, or secretin, which are the stimuli to pancreatic activity.

The subconscious mind, which is at the foundation of these and probably all other physiologic processes, is amenable to suggestion. Landon Carter Gray, the great New York neurologist, says: "Certainly the cures effected by so-called 'Christian Science' and 'faith cures' are indubitable evidence of the potency of suggestion. The truth of the matter is that the whole subject is one which has yet been imperfectly studied, and the truly scientific attitude toward it should be neither one of skepticism nor credulity, but simply of expectancy. That in the capacity to play on the mind in its various functions, there is a great future, for at present we are stupid enough to think that it is science to play on the peripheral terminations of the nerves, or the structures in which they terminate, while we deem it quackery to make use of the gray matter, and all its wondrous molecular play. The wonderful, but only half understood phenomena, are neglected clinical illustrations of the influence of the mind over the body; and in the full day of medicine, into whose dawn we are now peering, we shall make proper application of the mental therapeutic methods."

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## CONGENITAL TORTICOLLIS \*

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Congenital torticollis is a deformity, not a disease. It is a painless contraction particularly of the sterno-mastoid muscle of one side of the neck, due to prenatal causes or to causes operating at the time of birth. Strictly speaking, torticollis due to causes operating at the time of birth is not congenital, but is accepted as such by those writers best qualified to express an opinion, because of the varied theories advanced as to the etiology. The fundamental factors causing this deformity seem wrapped in mystery. Of the theories advanced, none have been proved. Among those which have had the widest acceptance is that of Stroymeyer who, in 1838, held that torticollis was due to injury of the sterno-mastoid muscle at birth, followed by hematoma of the muscle. This view was generally accepted up to 1884, when Petersen, in an excellent paper,

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\* Read at a meeting of the Chicago Medical Society, March 22, 1911.



reviewed the literature and came out emphatically with the statement that torticollis was always congenital.

Kader, in a contribution of 200 pages, holds that wryneck due primarily to intrauterine head torsion has not been proved either clinically or experimentally; that various degrees of wryneck may occur due, for instance, to pressure in the genital passage, either by the hand or by instruments, or by stretching the sterno-mastoid muscle in certain head positions; rarely the result of injury to the muscle alone or inflammation alone, but a combination of the two, and that the bruised muscle is a good breeding ground for bacteria derived from the intestinal canal by way of the blood, causing a myositis.

According to Mikulicz, who in 1895 discussed the subject of the etiology in the light of Kader's research, torticollis may be congenital, resulting from inflammation *in utero*, but is more frequently due to injury of the muscle at birth, with an accompanying hematoma and myositis, which ultimately destroys the substance of the muscle, causing contraction and deformity. He based his views on the results of microscopic examinations of partially or totally excised muscles from twenty-one cases of wryneck. Changes were present even in parts of muscle which, macroscopically, seemed normal, and showed new-formed scar connective tissue in place of muscle fiber.

Of late years there have been many advocates of the theory that congenital torticollis is of prenatal rather than post-natal origin. The reasoning of Whitman, who accepts this view, is well taken and, briefly stated, is as follows:

1. Muscle rupture in any other part of the body is not followed by myositis and contraction.

2. It is impossible to cause myositis and contraction by any form of injury to the muscle of animals unless it be combined with actual infection with pyogenic germs.

3. The majority of cases of congenital torticollis seen soon after birth present no evidence of hematoma.

4. Of seven consecutive cases of hematoma of the sterno-mastoid muscle, three were breech presentations, two were delivered by forceps, and in two version was performed. In none did torticollis accompany or follow the hematoma.

5. Observation of two cases of congenitally shortened sterno-mastoid muscle which ruptured at time of birth showed that hematoma was a complication, not a cause, of torticollis.

6. The hypothesis that explains the origin of torticollis by muscle rupture, myositis, scar contraction and permanent shortening, is an assertion unsupported by evidence.

In the opinion of Young, the majority of causes of congenital torticollis operates before rather than during delivery. Cabot holds that wryneck is congenital, similar to club-foot, the origin of which seems to be a constrained position *in utero*. Hoffa claimed to be able to distinguish torticollis of fetal origin from that of the acquired form by atrophy of the face and neck, characterized immediately after birth. Facial asym-

metry, however, has been noted in cases of acquired torticollis of long standing. Petersen and Heusinger have reported cases in which marked shortening of the sterno-mastoid muscle was present in infants only one day old. The writer can also report four cases in which the deformity was noted in infants only one day old. It is maintained by Tubby that wryneck is common in children who have been born by breech presentation where there has been much traction, with some rupture of the fibers of the sterno-mastoid muscle followed by hematoma, and also in children who are the subject of congenital syphilis. "since it is well known that congenital syphilis gives rise to indurative changes in two particular muscles—sterno-mastoid and biceps."

De Lee, in a recent communication to the writer, states that he has never seen a wryneck follow a simple hematoma of the muscle; that wryneck is congenital, due to "cramped position *in utero*, with shortening of the muscle"; and that injury at birth affects a congenitally shortened muscle, which in time may become infected, and the resulting myositis reproduce a wryneck. "But it is possible that brutal injury of the sterno-mastoid muscle, such as may occur by violent and unskilful methods of breech delivery, or by crushing of the muscle by the blades of the forceps, wrongly applied or too powerfully compressed, may so damage the muscle that infection is invited. Such injuries are rare, however, because the muscle can stand much torsion and traction without rupture."

Spencer and Gask point out that a ruptured muscle has a tendency to lengthen rather than to shorten. From the 700 or more tenotomies performed by the writer, he may safely assert that in every case free from infection the tendon lengthened.

A careful perusal of the literature on congenital syphilis showed that no mention was made of changes occurring in muscles. It must, therefore, be admitted that syphilitic manifestations in muscles are, for the most part, of very rare occurrence, if they exist at all, a fact which in itself is a direct contradiction of the theory set forth by Tubby.

The writer is unable to prove that heredity is an important factor in the origin of congenital torticollis; however, it is quite evident that a predisposition exists. It has been reported that one woman gave birth successively to seven wryneck children. The writer has had under his personal care the male child of a mother who gave birth to four wryneck children, three males and one female. A similar case showed three children—two males and one female—born with wryneck. Another instance, substantially different from those already cited, showed two sisters, one of whom was afflicted with torticollis, while the other, although perfectly normal herself, gave birth to a wryneck child.

Congenital torticollis affects the right side oftener than the left. In the series of fourteen cases to be cited, ten were of the right and four were of the left side. Of these, three were breech presentations, three were forceps deliveries, and eight were of normal birth. Hematoma occurred in two cases.

The following summary is believed consistent with the facts at our disposal, and is offered as a simple explanation:

1. Although heredity has not been proved as an etiologic factor in congenital torticollis, yet it may be assumed that it exists.

2. There is no doubt a natural weakness of the neck muscles in some children that would not ordinarily, in normal children, cause any damage, yet would affect the fetus so predisposed.

3. Malposition of the child *in utero* and pathologic presentations contribute greatly to congenital torticollis.

4. Damage to the sterno-mastoid muscle sufficient to reduce the resistance and so permit of an infection may cause myositis and contraction.

5. It is admitted that there are cases of congenital torticollis in which injury to the muscles at birth can be excluded.

6. Although denied, it can readily be seen that "*accouchement forcé*" may contribute its share of damage to the child by the violence occasioned in manipulation.

7. In rare cases congenital syphilitic myositis of the sterno-mastoid muscle may occur, but it is doubtful if it is followed by wryneck.

At the time of birth the deformity may be so slight that it is barely noticeable. Later the head is drawn to the side of the contracted sterno-mastoid muscle, which stands out as a tense band, while the chin is slightly elevated and points in the opposite direction. The sternal end of the muscle is more often contracted than the clavicular. One of the most interesting secondary changes is the asymmetry of the skull and face, which has been carefully studied by Witzel. This asymmetry diminishes if the deformity is corrected early. The affected side of the head and face becomes atrophic; the measurement from the external canthus to the angle of the mouth is smaller, the eyebrow is less arched, the nose deflected, and the cheek less full than on the normal side. No satisfactory explanation of these phenomena is forthcoming, although they are probably due to imperfect blood supply. As a result of the abnormal position of the head, lateral curvature of the cervical region of the spine is always present, the convexity of the curve being directed away from the affected side. Occasionally a secondary compensatory curve develops in the lower dorsal region.

Congenital torticollis is simulated by cervical Pott's disease. In the latter there is restricted motion of the head in all directions; the chin and head are drawn to the same side and tension of the muscle is painful, whereas in wryneck motion of the head is restricted in one direction only, i. e., away from the contracted muscle, and the head is drawn to the side of the contracted sterno-mastoid muscle, while the chin points in the opposite direction.

Treatment should begin on the infant as soon as a diagnosis has been established. It consists of stretching and massaging the contracted tissues. The shoulder on the affected side is held down while the head is drawn over in the opposite direction, putting the contracted tissues on the stretch, and massaging vigorously three or four times daily. By the third year the deformity has become well established, when tenotomy becomes



necessary, either subcutaneously or openly. The writer prefers the open operation, as it is the more exact and the safer method. A longitudinal incision is made one-half inch above the clavicle, between the two heads of the sterno-mastoid muscle, beneath the contracted portion of which a grooved director is passed, and on which the tendon is completely divided. If necessary, both heads of the muscle may be divided through the same incision. Care must be taken not to injure the anterior jugular vein behind the sternal head, the external jugular and subclavian veins behind the clavicular head. The severed ends of the muscle will unite in three to four weeks by the formation of connective tissue. The skin incision is closed with interrupted sutures of fine catgut. A plaster cast is applied from the head to the waist, with the head and chin maintained in the over-corrected position, for three months.

The Mikulicz operation consists of a partial or complete extirpation of the sterno-mastoid muscle, and its recommendation is chiefly that no



Fig. 1.

Case 2.—Right torticollis, showing the secondary distortions of the head and face. Girl of 13 years.



Fig. 2.

Case 2.—Two years after operation.

careful orthopedic after-treatment is necessary, while it is to be condemned for not only being too radical an operation, but for its cosmetic effect as well.

The short recital of a few cases will help to show the composite nature of the deformity of wryneck, and illustrate the descriptions contained in the foregoing pages.

CASE 1.—Norman F., aged 8 years. Normal birth, though six weeks ahead of time. On the third day it was noted that the head was drawn to the right side. No swelling on the neck observed. Examination shows the head is drawn to the right side; the sterno-mastoid muscle shortened, the sternal end more prominent than the clavicular. The face is smaller on the right side than on the left. There seems to be no deformity of the spine.

Sept. 4, 1908: Ether given. Both the sternal and clavicular ends of the sterno-mastoid muscle divided through a vertical incision, one-half inch above the clavicle. Incision closed with fine catgut, without drainage, and a plaster

cast applied from the head to the waist, with the head maintained in the over-corrected position.

Nov. 6, 1908: Cast removed. Head is held in the over-corrected position.

CASE 2.—Pearl S., aged 13 years. Forceps delivery. A swelling on the right side of the neck was noticed four weeks after birth. Some weeks later this swelling "took the shape of a tight cord." The head is drawn to the right side and the chin points to the left; the sterno-mastoid muscle is contracted, especially the sternal end, which stands out as a tense band; there is secondary distortion of the right side of the face, and a slight deviation of the spine.

March 26, 1909: Both ends of the sterno-mastoid muscle were divided, and a plaster cast applied, as in Case 1.

June 29, 1909: Cast removed. Head retained in the over-corrected position. There is very much less distortion of the face. Measured for collar.

CASE 3.—Oliver L., aged 14 years. Forceps delivery. Is one of twelve children. A brother has a right torticollis and a sister, now dead, also had a right torticollis. It was observed within a few hours after birth that the head was



Fig. 3.

Case 7.—Left torticollis, showing the distortion of the face and the high shoulder. Woman of 31 years.



Fig. 4.

Case 7.—Eighteen months after operation.

drawn to one side. No swelling on the neck noticed. The head is drawn to the left and the chin points towards the right side. The clavicular portion of the sterno-mastoid muscle is contracted and stands out as a tense band; there is secondary distortion of the left side of face, and a marked lateral curvature of the upper part of the spine.

July 7, 1909: Ether given. Both heads of the sterno-mastoid muscle divided, and a plaster cast applied with the head in the over-corrected position.

Sept. 27, 1909: Cast removed. Head is held in the over-corrected position. Measured for collar.

CASE 4.—William D., aged 19 months. Normal birth. Observed almost immediately after birth that the head was held to one side. No swelling on the neck at any time. Right side of face is smaller than the left; right sterno-mastoid muscle shortened—the clavicular portion more prominent than the

sternal. The head is drawn towards the right side, while the chin points to the left. Operation advised after three years of age.

CASE 5.—Edward B., aged 7 years. Forceps delivery. It was noted by mother soon after delivery that the head was drawn to one side. No swelling of the neck observed. The head is drawn to the right and the chin points towards the left side; both the sternal and clavicular portions of the sterno-mastoid muscle are contracted and stand out as tense bands; the right side of the face smaller than the left, and a slight deviation of the upper portion of the spine.

June 30, 1909: Ether given. Both sternal and clavicular portions of the sterno-mastoid muscle divided, and a plaster cast applied with the head in the over-corrected position.

Sept. 28, 1909: Cast removed, head retained in the over-corrected position. Measured for collar.

CASE 6.—Robert L., aged 20 years. Forceps delivery. Is one of twelve children. Had a brother with a left torticollis and a sister with a right torticollis. The wryneck was observed immediately after birth. No swelling on the neck noted.

There is marked symmetry of the face; the right sterno-mastoid muscle is contracted; both the sternal and clavicular portions stand out as tense bands; the head is drawn towards the right side, and there is marked lateral curvature of the cervical region of the spine. Operation advised.

CASE 7.—Mary R., aged 31 years. Normal birth. It was observed on the first day of birth that the head was drawn towards the left side. No swelling on the neck noted at any time. A 19 months old nephew has a right torticollis. When 13 years of age was operated on for wryneck with no improvement.

There is marked deformity; the head is drawn to the left and the chin points towards the right side; the sterno-mastoid muscle, especially the clavicular portion, is much contracted and stands out as a tense band; the shoulder is higher on the side of the deformity than on the opposite side, and there is a deviation of the upper portion of the spine.

Oct. 12, 1909: Ether given. Both heads of the sterno-mastoid muscle divided, and a plaster cast applied.

Jan. 10, 1910: Cast removed, head retained in the over-corrected position. Measured for collar.

CASE 8.—Vera A., aged 8 years. Normal birth. Deformity first noticed during early infancy. No swelling on the neck observed. The head is drawn towards the left side; the left sterno-mastoid muscle contracted; the left shoulder higher than the right; the left side of face smaller than the opposite side, and there is a deviation of the upper region of the spine. Operation advised.

CASE 9.—Tom P., aged 10 years. Normal birth; not able to state definitely at what age the deformity appeared, but believes some time in early infancy. No swelling on the neck observed at any time. Two brothers and a sister have a similar deformity.

The head is drawn towards the right side; the right sterno-mastoid muscle is contracted, especially the sternal portion, and a slight asymmetry of the face exists. Operation advised.

CASE 10.—Eliza D., aged 10 years. Breech presentation. Believes deformity was noticed when one year of age, and has gradually grown worse.

Right side of face is smaller than the left; right sterno-mastoid muscle shortened; the sternal and clavicular portions prominent, and there is a slight deviation of the spine. Operation advised.

CASE 11.—Victoria L., aged 3 months. Normal birth. When six weeks old, a tendency for the head to lean to one side was observed. No swelling on the neck at any time. The head leans towards the right side and the sterno-mastoid muscle slightly contracted. Massage advised.

CASE 12.—Lawrence K., aged 14 years. Version and breech presentation. Believes deformity first noticed when past 2 years of age. Photograph, taken



when 3 years old, shows marked wryneck. No swelling on the neck observed. The head is drawn towards the right side; the sterno-mastoid muscle is contracted, especially the clavicular portion, which stands out as a tense band; atrophy of the right side of face, and marked lateral curvature of the cervical and upper dorsal region of the spine.

Feb. 15, 1911: Ether given. Both the clavicular and sternal portions of the sterno-mastoid muscle divided, and a plaster cast applied from head to waist, with the head maintained in the over-corrected position.

CASE 13.—Louis W., aged 6 weeks. Breech delivery; very difficult labor. When 4 weeks of age a small swelling was noticed on right side of neck. Dr. Joseph B. De Lee, who referred the case, stated that there was no swelling when the child was last examined ten days after birth.

The head has a tendency to lean to the right. In attempting to over-correct the position of the head, the sternal and clavicular portions of the sterno-mastoid



Fig. 5.

Case 12.—Right torticollis (post-operative), showing the method of maintaining the head in overcorrected position.

muscle stand out prominently, and a hard tumor, about the size of a small walnut is felt in the substance of the muscle at the junction of the middle and upper third. Massage advised.

CASE 14.—Anna B., aged 27 years. Normal birth. States that she was born with the deformity. The left side of face is smaller than the right; the head is drawn to the left and the chin points towards the right side; the sterno-mastoid muscle is very much shortened; the left shoulder is higher than the opposite one and there is deviation of the spine. Operation advised.

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## DISCUSSION

Dr. E. M. Brown: I would like to call your attention to a condition which simulates torticollis congenitalis muscularis because it should be considered in diagnosis and treatment, that is torticollis congenitalis osseus. There is sometimes an asymmetry or assimilation of the atlas and occipital vertebra which results in a tilting of the head to one side resembling the deformity of the muscularis type. Again there is sometimes a fusion of the upper cervical vertebrae, say the second and third and the second, third and fourth, with an accompanying lateral tilting of the head. One should be sure which condition is present before attempting treatment. A radiograph will usually clear up the diagnosis when such osseous abnormalities are present.

Now as to the treatment of congenital muscular torticollis. We know that only the cases mild in degree are amenable to other than surgical treatment. The surgeon in selecting his method should be guided by the degree of torticollis and the age of the patient.

In the more advanced degrees of torticollis, in patients older perhaps than those shown here to-night, we not only have the mastoideus involved, but other muscles or groups of muscles as well, so that in the treatment it is necessary to cut all muscular structures that tend to draw the head to one side.

Tenotomy of the mastoideus alone will be sufficient in some of the milder cases. Förderle mentions a point in dealing with the sterno-clavicular tendons after division which I think worthy of consideration because it delays the formation of a new tendon. He unites the sternal and clavicular ends to each other by suture.

In most cases, in cases in which other muscles than the mastoideus are involved I think the operation should be radical. Tenotomy alone will not do. I think to prevent recurrences in the older children and young adults the removal of the sterno-cleido-mastoid in part or in whole as practiced by Mikulicz, Crile, and others, together with incisions in the border of the trapezius, scalenius or any other muscle or group of muscles, which tend to tilt the head, or even the fascia, also should be made.

After operation the plaster-of-Paris cast with the head in over-correction is the classical method of treatment at the present time although the stout rubber cords intelligently adjusted extending from a band about the head to another about the chest under the arms is in use also.

Injury has been done by over correction. In these cases there is considerable obliquity of the head with marked curvature of the cervical spine and when over-correction is made after free division of muscles and fascia with the relaxation of anesthesia it is easy to understand that injury of the blood-vessels, nerves or even the cord itself might occur. Injury of the cord is more apt to occur in the osseous type of torticollis than in the muscular type, hence the importance of differentiating these two types.

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COMPLETE SUTURING OF THE BLADDER AFTER SUPRAPUBIC SECTION \*

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The history of complete suture of the bladder after suprapubic incision is rather instructive. In this history we may distinguish three distinct periods. In the first period any attempt at completely suturing the bladder was considered a mistake of art. In the second period the

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complete closing of the bladder was admitted to be a desirable goal, but the causes of the failures were not properly recognized; all the stress was laid on the choice of the suture material and on the method of suturing employed, hence all the devices of figure-of-eight sutures, pursestring sutures, flap suturing and finally Rydygier's proposition of using the conglutinating power of the peritoneum as a guarantee of success in bladder suture. Then came the third period of evolution, in which two principles were recognized: first that the complete closing of the bladder after suprapubic operation is almost always desirable, and secondly that the success of the suture in bladder work is dependent on the same conditions that rule plastic work in surgery of other parts.

The medical historian may again in this field of work experience a striking observation, namely, how long it always took, and it seems always will take, before sound general principles are applied to bladder surgery.

The gynecologists in their work on vesicovaginal fistulas were a long time aware of the conditions of success in closing bladder defects and acted accordingly, while the surgeons working on the male bladder were still groping in the dark and were experimenting, the latter quite often along wrong lines.

The gynecologists knew for a long time that there are two fundamental factors governing the success of bladder suture; first the prevention of all tension, and second the bringing in apposition of rather broad raw surfaces without any interposition of vesical mucosa. At the same time their experience proved that the choice of the suturing material is of no importance: it is the way the sutures are set, and not the material that counts in results. It also became evident that the existence of a cystitis is a negligible quantity. There is hardly a case of vesico-vaginal fistula operated on that does not present some inflammation of the bladder.

In spite of all, the suturing of the bladder after suprapubic incisions was and still is, in some quarters done by general surgeons in a non-systematic way, and the presence of a cystitis was also a strict contra-indication against total closing of the bladder. Another error in this direction was that after complete suturing of the bladder the muscles and the skin were closed up. It was thought sufficient to insert some drainage in order to prevent all trouble in case some infection should have occurred. But we must allow that our means of drainage may fail to thoroughly drain, and furthermore that in case of infection the subsequent infiltration and swelling of the involved tissues prevent the drainage where it is most needed, and that drainage anyhow, can only remove exudations in liquid form, but does not prevent the most disastrous local consequences of a violent infection, that is, great tension and subsequent necrobiosis of the tissues involved. Another point is this: in a case of failure of the bladder suture for some reason there is no assurance that the inserted drain will be in communication with the leakage and consequently urinary infiltration may occur at a point not reached by our drain.



The demands on a method of complete suturing of the bladder can be formulated as follows: the suturing of the bladder incision has to be done in such a way as to give the best possible chances for a primary union and the best possible guaranty against leakage; the structures forming the abdominal wall must be handled by a method that will prevent all disastrous sequelæ of urinary infiltration or infection occurring during or after the operation; and finally this method must permit a quick reunion of the cleft in the abdominal wall after the above-mentioned dangers are once excluded.

In order to bring broad raw surfaces together, and these only without any interpolation of the vesical mucosa, the mucosa is detached by means of a poker or a knife handle for a few millimeters from the rest of the bladder wall. The sutures are now inserted in such a way that the raw surfaces of the lips of the bladder incision are drawn together while the detached edges of the mucosa protrude like a small ridge into the bladder lumen. It is preferable to begin with the suturing at the lower end of the incision and to use interrupted sutures, because in this way it is easier to get the proper apposition. This suture line is followed by a running suture drawing some more muscularis over the first closure, so as to prevent any leakage. This second suture line starts and ends beyond the poles of the first suture line. As material, catgut should be used so as to prevent any immigration of sutures into the bladder, which phenomenon is frequently observed, when non-absorbable sutures are used.

After the bladder is closed up, interrupted sutures are inserted through the fascia of the recti and through the skin; these sutures are not tied, and the wound is loosely packed with some antiseptic. If one chooses to insert separate sutures for the muscles and for the skin, the muscle sutures of course will be catgut; if one chooses to insert only one layer of through-going sutures non-absorbable material may be chosen. If after twenty-four or thirty-six hours the gauze is removed and no leakage and no signs of infection are discovered the fascia and skin sutures are tied. Should leakage or signs of infection be noticed, the wound is treated openly until everything is clean and red and then secondary suturing may be resorted to.

As to the question of the permanent catheter, most of the urologists with operative experience become more and more inclined to discard the permanent catheter as a means of draining a completely sutured bladder. It is in fact better to either let the patient urinate naturally or in case he or she should be unable to do so to employ catheterization at regular intervals.

As to the contra-indication against complete suturing of the bladder, it was mentioned before that experience has proven that the mere presence of a cystitis is no contra-indication whatever against completely closing a bladder.

A bladder should not be completely reunited after suprapubic incision if a hemorrhage occurring during the operation had to be checked by tamponade, or if the operation revealed the existence of an infiltrating cystitis, which could only be cured by leaving open a rather large part of the primary incision for some time.

THE BLOOD FINDINGS IN THE LAST STAGES OF CHRONIC  
PULMONARY TUBERCULOSIS \*

JOHN C. WARBRICK, M.D.

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CHICAGO

Mrs. H., aged 42 years. This case was first seen Sept. 30, 1909, and the following history given: the patient was fairly well as a child and lived in the country. Never robust but inclined to be thin. For some years was bothered with catarrh now and again. In 1904 had an attack of la grippe. Taught school eight years when her health gave out. Married seven years but had no children. Had a course of training in gymnastics, also in elocution. Never had typhoid fever nor an attack of pneumonia. The patient dates her trouble from one summer when she got worn out from social affairs and contracted a cold from which she could not recover although trying various remedies. She spent three years at a place near Denver, Colo., trying the fresh-air cure and forced-feeding treatment but received no benefit in any way, gradually getting worse from the time she went out and losing in flesh until she left. Next she tried a course of electrical treatment without any benefit. Her menses ceased in December, 1908. Patient is thin, weak and emaciated, but has a good appetite.

Gurgling and splashing sounds readily heard in the stomach during the course of a month along with intense heat over that area. The loss in weight amounted to 40 pounds and more. No hemorrhages from the lungs; pulse thin, thready and feeble, but regular; at times fuller and stronger.

The temperature followed the usual course in this disease, being low in the morning, sometimes subnormal, with always a rise in the evening. It was taken from October 3 to March 4, in the morning, at noon and in the evening. There is nothing unusual to report concerning it. The lowest morning temperature was 95 and the highest 100, the lowest temperature at noon was 97 and the highest 101. In the evening the lowest point was 100 during the disease with an occasional rise to 101.5.

Some days the pulse was 100; then again it changed to 88 and varied thus from time to time.

On October 26 the amount of sputum brought up in twenty-four hours amounted to 100 c.c., November 1, 90 c.c., and November 3, 80 c.c.

In the right nostril there was an ulcer on the septum and some watery mucus, while the membrane was depleted and pale. This was much the condition in the left nostril. Both nostrils were free to breathe through and the reaction to stimuli was present in each as evidenced by sneezing.

The voice was fairly good but some slight huskiness affected it at times along with an irritating cough that tended to exhaust the patient.

During the course of a month the blood was examined five times with the following results: September 30, red blood corpuscles 11,520,000 in

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\* Read at a meeting of the Chicago Medical Society, March 29, 1911.

one count, 6,000,000 in another and in the last count 4,700,000; white blood corpuscles, 13,600 and 10,000; sp. gr., 1.051; hemoglobin, 65 per cent.; large mononuclears, 0.8 per cent.; polynuclears, 92.2 and 96.0 per cent.; lymphocytes, 6.0 and 4.0 per cent.

October 7: reds, 6,720,000 and 4,840,000; whites, 9,000 and 5,000; sp. gr., 1.032; hemoglobin, 25 per cent.; polynuclears, 96.0; lymphocytes, 4.0.

October 18: reds, 5,640,000 and 4,920,000; whites, 13,200 and 7,000; eosinophils, 84.0 and 86.4 per cent.; lymphocytes, 14.4 and 13.0 per cent.; black spots found on the polynuclear cells.

October 26: reds, 9,720,000 and 6,880,000; whites, 6,000 and 5,000; polynuclears, 90.0 and 88.0 per cent.; lymphocytes, 10.0 and 12.0 per cent.

November 3: reds, 6,620,000 and 5,360,000; whites, 6,800 and 6,400; eosinophils, 0.8; large mononuclears, 0.8 per cent.; polynuclears, 84.0; lymphocytes, 14.4.

With regard to the eosinophil cells especially, also the large mononuclear cells, the report of this case does not seem to agree with what is supposed to be the authorized facts in the relation of each to the last stage of the disease.

When cavities are found it is stated that the eosinophil cells increase but in the five blood examinations made such was not found to be the case, for there was no increase in the eosinophils while in three of them they were absent entirely. It is stated again that the eosinophils decrease as the disease advances. In this case where the disease was advanced and death was soon to take place there was no increase in these cells. They were absent in three of the examinations made and slightly present in two only, one of the examinations being made just before death which followed the next day when the number of eosinophils was 0.8 per cent.

Again, it is said the eosinophils may be absent in severe cases but not affected in simple cases, while it is believed they may be absent entirely throughout the whole course of the disease in some tubercular cases; but in many cases examined this has never been the rule. Zappert found the following figures in the report of the number of eosinophil cells in his tubercular cases, the absolute figures being 3,000 to 4,000; 3,000; 7,000; 8,700; 6,000; 8,300; 7,600; 29,000; 14,000; 3,400.

In the advanced stage of tuberculosis then, the differential blood count may vary a great deal; no two counts may be quite the same, while this may be the case throughout the whole course of the disease.

The number of eosinophil cells may vary widely alone during the whole course of the disease and from the experience of others they may be absent entirely at all stages of the disease. They may be present in large numbers during the whole course of it, or they may be present only in small numbers at any stage, while at times they may be absent and at other times they may be present in the same case when blood-counts are made.

So in the prognosis as to the ultimate course of the disease it is hardly safe to be guided by the count of the eosinophil cells alone or of the large mononuclear cells. The presence of large mononuclear cells is said to be



a favorable sign in the disease, but it seems to me this part cannot be depended on to indicate the course of the disease either to a fatal termination or to a recovery. In this case the last blood-count being made the day before death, large mononuclear cells were found to be present, this being the only time they were found during the five examinations made in the course of the month, except in the first count made.

In all the examinations made the red corpuscles were greatly increased each time and more at some of the counts, varying from the normal number of 5,000,000 up to 11,000,000 and over. This was the same of the leukocytes, in two instances the number present reaching 13,600; however, these may reach a much higher figure than stated. The polynuclear cells were also increased from their normal number to 96 per cent.

The specific gravity of the blood and also the amount of hemoglobin of course will naturally diminish as would be expected in the last stages of the disease, where a wasting process has gone on for a long time. This may also be the way in the early stage to some extent, especially if there is much hemorrhage at different times. While the specific gravity and amount of hemoglobin may diminish a great deal, still the number of red blood corpuscles and leukocytes may be normal through the whole course of the disease in some cases; hardly what one would expect to find.

In another case of advanced tuberculosis where there has been no hemorrhage, the red blood corpuscles number 3,120,000, leukocytes 12,000; specific gravity 1.050; hemoglobin 0.70; eosinophils 0.8, polynuclears 88.0, and lymphocytes 11.2.

In a case of supposed tuberculosis extending about twenty years in a printer, the red blood corpuscles number 7,080,000 and 6,920,000; leukocytes 13,000 and 12,000; specific gravity 1.060; and hemoglobin, 100; eosinophils 4.8; mononuclears 1.2; polynuclears 72.0 and lymphocytes 2.

In the case of a woman with a tendency to tuberculosis, reds 6,800,000, whites 8,800; eosinophils 0.8; large mononuclears 0.8; polynuclears 70.4; lymphocytes 28.0.

#### DISCUSSION

J. F. Hultgen: It is to be regretted that we have to make blood-counts and draw conclusions from such meager material. The hematology of the past is suffering from just these things and they have caused honest findings to fall into disrepute.

What the doctor says of the five blood-counts is quite possible. You can deduct nothing from them because they have been made without reference to other laboratory findings. I cannot associate his polynuclear count with any of the blood-counts I have made (and I have made nearly three thousand). I should really like to see them.

In regard to the red count: I think they have little to do with pulmonary tuberculosis as they are not concerned in disease conditions in the same way as the whites. They are of no moment and cannot help us in either diagnosis or prognosis. The total white counts have been discussed before in various publications, by myself two years ago, by Steffen one year ago, by Arloing-Gentry last year and recently by Kagan and Barnes in this country. Last year I had a paper on this subject before the State Society.

In pulmonary tuberculosis of the first stage there is a return to the infantile type of blood count, with a total white count of between 6,000 and 7,000, something like 551 of polynuclears and 39 of small mononuclears, 4 per cent. of large mononuclears, and 2 per cent. of eosinophils.

Arnett, who is really the greatest worker in this field of pathology has devised another method of illustrating this which he terms the "Nucleo-analytic method." He found the same thing long before me as to the total blood-picture. Bonstrof and a number of men in Europe have followed him to a certain extent.

I should certainly not single out one particular white blood cell either for diagnosis or prognosis. I think that the entire leukocyte picture must be taken into consideration.

J. C. Warbrick (closing the discussion): I have not much to say except that I did not intend to go into any of the details of the blood except as to the significance of the eosinophil totals. They may be present throughout or absent entirely. The authorities seem to think that you can give a prognosis by these cells alone or the mononuclear cells alone. The doctor is mistaken in his statement that my paper is based on examinations made in one case only. There are four cases cited.

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## THE MEDICAL PROFESSION OF DOUGLAS COUNTY

JAMES L. REAT, M.D.

TUSCOLA, ILL.

GEORGE WADE BACON, M.D. Coming here at a time when country roads were like angelic visitations and bridges across streams existed only in prophecy, Dr. Bacon, a native of New Jersey and a graduate of Jefferson Medical College, was the first physician known to the writer to have settled within the bounds of what now constitutes Douglas County.

The Doctor located one mile south of Bourbon in 1834 and was soon engaged in the active practice of his profession, but it was not long until hard work and an insalubrious climate debilitated and devitalized his system, his health failed, and he died in 1847 at the early age of 40 years.

JAMES HARVEY APPERSON, M.D., a Virginian by birth and a graduate from Indiana Central Medical College, came to Fillmore in 1846, began the practice of his profession and moved to Bourbon in 1858. His visits to the sick extended into four different counties and compelled him to cross streams of water at flood-tide and bid defiance to bad roads, winter storms, midnight darkness and an enervating climate, meeting unflinchingly the varying vicissitudes of the pioneer physician of Illinois. The Doctor possessed a good physique, and while more sincere than genial in speech, commanded the respect and confidence of those who knew him. He rendered important aid in the formation of the new county and was recognized as a fine type of the Christian gentleman. The first time the writer met Dr. Apperson in consultation was just fifty years ago, in 1859, at what was then called "the hickory-wythe school-house," standing about seven miles northwest of Tuscola, where old "Captain Riney" then lived.

Some young men had been trying the speed of their horses, late on Sabbath evening. During a race one of them had been thrown against a tree, the impact being so great that it caused a compound fracture of the skull and other wounds, from the effects of which the young man died a few hours afterward, not regaining consciousness after the injury.

Here we met Dr. J. T. Johnson, who was a confrère of Dr. Apperson and a near neighbor in Bourbon. He had some knowledge of anatomy,

physiology and pathology, the fundamental sciences of medicine, but had permitted himself to be elected a justice of the peace and very soon discovered that there was an incompatibility existing in the practice of law and physic, that the compounding of the ingredients of Hippocrates and Blackstone resulted in some instances if not in all in potent prescriptions fraught with fearful consequences, that neither improved his rating as a diagnostician nor added to his limited number of shekels, but often entailed an opulent legacy of hate. There is a tradition that there was another doctor of the county whose friends elected him to the same office of justice of the peace, and it is related that the first case the "Squire" was called on to adjudicate was a variance between his two sons-in-law.

Relying on contemporary allusions to fill the gap of the known record, the following episode may serve to illustrate some of the privations of the early physicians before the advent of railroads. Two practitioners were called on to hold a post-mortem examination on the body of a person who was supposed to have died under suspicious circumstance. Then, as medical witnesses, they were subpoenaed before a court more than 25 miles away. They obeyed the summons, when a change of venue was obtained by one party of the litigants, and the doctors were haled before another forum twice the distance from their home, making over 150 miles traveled, with the loss of ten days' time and incidental expenses besides, without even a valid promise of an honorarium.

Prior to the building of the Illinois Central Railroad, the town of Bourbon was quite a commercial emporium for that day and contained a number of physicians divided into three parts like ancient Gaul: Allopaths, Eclectics and Botanics. All of them left the place except Dr. Apperson. Dr. Gardner moved to Farmer's City and continued in the active practice of his profession. Dr. Johnson went west. Drs. Duncan and Wilkinson changed their location also, while Dr. David A. Meeker purchased a farm 10 miles north, located on his land and continued in the active practice of his profession for about thirty years, when he removed to Atwood. At one time the Doctor represented his township on the board of supervisors and performed various important public activities in an honest, careful manner, and was regarded as a man of strict integrity. Originally from Ohio, he settled in Bourbon in 1852.

DR. LUCIUS McALISTER, pedagogue, merchant, physician, soldier and railroad builder, a native of New York, came to Arcola in 1857. He was an enthusiastic friend of the plan for a new county and worked for its success, and practiced medicine until the outbreak of the Civil War, when he entered the United States service as a cavalryman and fought his way through to the close, seeing much hard service. When he returned to civil life he again entered the ranks of his profession; but disliking its arduous duties, he shortly engaged in more congenial pursuits. Dr. McAlister was a well-informed man, had succeeded as a teacher in his younger days, cared very little for moral philosophy, was more temperate in his habits than his speech, radical and eccentric in his views, talked learnedly about lengthening human life by hygienic means and agreed



with the whimsical Hibernicism of Oliver Wendell Holmes, that a man should be careful in the selection of his ancestors.

DR. HENRY C. McALISTER, a nephew of Lucius, came to Arcola later than his uncle and engaged in the practice of his profession until war was declared, when he entered the Union Army as an assistant surgeon of volunteers, was promoted to surgeon and served in that capacity until honorably mustered out, when he returned home and subsequently located at Muscatine, Iowa.

DR. JOHN W. McKINNEY, a native of Indiana and a graduate of Jefferson Medical College, located in New Albany (Camargo) in 1853 and resided there for forty years (except one year in Centralia, Ill.), engaged actively in the practice of his profession. His calls coming from up and down the timber, and for a number of years from across long stretches of sparsely settled prairie, was one of hard work, for he had to overcome more physical obstacles and endure greater trial than any physician of whom the writer has knowledge. As a physician, the Doctor had the confidence of his patrons to a remarkable degree. He was a man of strong individuality, possessed of an iron will, was the custodian of his own opinions and willing to express them without regard to friend or foe, had a code of ethics peculiar to himself, inclined to be dogmatic, but a true friend and affable gentleman, a loyal citizen and accomplished more in securing the legislative enactment creating the new county than any other doctor whose interests were affected by the geographical and political change.

When war was declared, he entered the army as surgeon and served until peace was declared, then returned to his home and resumed the active duties of his profession. The Doctor represented his township on the board of supervisors for a time, and for four years was a member of the U. S. examining board for pensions, Dr. John M. McCown of Arcola and Dr. James L. Reat being the other two members at that time. The following incident somewhat remotely connected with the pension board of Tuscola is not devoid of interest. Five years after the death of Dr. John W. McKinney of Camargo, the writer and Dr. John F. McKinney of Arcola were summoned, as witnesses, before a circuit court sitting at the county seat of DuPage County. When we reached Wheaton it was discovered that it was John W. McKinney of Camargo instead of John F. McKinney of Arcola who was wanted. This was in October, 1902. Fifteen years previously the pension board had examined an ex-soldier for increase of pension. Some time subsequent to this examination he was in a wreck on the I. C. R. R. while traveling through the state of Kentucky and brought suit for damages, as a result of injuries received. The railroad contested the suit on the grounds that the injuries claimed as a result of the wreck were, pathologically, identical with the disabilities on which the application for increase of pension had been predicated fifteen years before, and as evidence, essayed to present to the court the original certificate of the pension board brought from the government archives in Washington City, D. C.

Dr. Benjamin F. Henry, who came from Pennsylvania in 1857, and Drs. Henry D. Jenkins and Hezekiah D. Martin of Kentucky, who located on farms near Arcola in 1854, were all well-educated physicians and strong advocates of the new county, though neither of them ever engaged in the active duties of his profession after coming to Illinois; each had been in active practice. The first time the writer recalls meeting Dr. Henry was in 1861 at the time when Bullock shot and killed Eves in Arcola. Dr. Henry was made foreman of the jury of inquisition. At that time he appeared to be a man of middle life, his physique was robust, a rather striking personality, quiet, dignified, optimistic, sanguine of success in his calculations, having a psychology of his own.

Dr. Jenkins was a graduate of Yale, a lover of *belles-lettres*, a literary scholar, well-versed in the Anglo-Saxon and one or two other languages, a student of history, biology, hygiene, sanitation and their collateral subjects.

Dr. Martin, like the old Roman consul, Cincinnatus, and our own Israel Putnam of Revolutionary fame, was called from his plow to the defense of his country. When the tocsin of war sounded he was one of the first to offer his services in defense of the Union cause, was commissioned captain, went to the front, and after seeing much hard military service, fell at the battle of Liberty Gap while heroically leading his soldiers to victory. No truer patriot fought during the Civil War, no braver man fell with Leonidas at Thermopylae. In civil as in army life, the Doctor's habits were exemplary, his intelligent Christian character symmetrical.

DR. A. K. P. TOWNSEND, born in Maine, a graduate of an eastern college, located in Camargo and practiced his profession for seventeen years, from about 1856 to 1873, when failing health from an insidious disease depleted his physical forces and forced his retirement. The Doctor was a man of good address, serious of mien and speech, inclined to be aggressive, somewhat dogmatic, yet a very courteous gentleman who tried hard to look on the bright side of life, notwithstanding the sword of Damocles appeared to hang over him. At one of our medical society meetings a case of cancer was brought before the physicians who were present. All the doctors examined the patient except Dr. Townsend who, when asked why he did not, shrugged his shoulders and replied by saying that he had a mother and two sisters die of that malady—apparently anticipating the manner in which he would be compelled to answer "Nature's stern decree."

DR. JOHN C. PARCELL, who came to Camargo in 1855, was a good, active friend of the new county and rendered efficient aid in securing the new organization.

In the study of medicine the Doctor had had a different training in pathology and therapeutics from most students of that day and had arrived at the conclusion that all diseased action of whatever kind, acute or chronic, functional or organic, infectious or malignant, was an evidence of enfeebled vitality of the entire system or a part, and that the proper function of the physician was to equalize the circulation of the

blood by aiding the *vis medicatrix Naturæ*, abjuring phlebotomy from his armamentarium.

In 1869 he abandoned his profession, entered politics, was elected to the office of county clerk and removed to Tuscola. The Doctor had a most creditable war record, first as lieutenant, then by promotion to captain. After leaving here, he again entered the government service and moved his family to Washington, D. C.

DR. HARVEY J. BASSETT, a native of Vermont and a graduate from Burlington, was the first physician to locate in Tuscola, coming here in 1857 and engaging in the practice of medicine until the opening of the Civil War, when he entered the Union Army as lieutenant, and, after a few months' military service, secured a transfer to the medical division, but failing health compelled him to retire to civil life. After his return home and partial recovery from the disabilities incurred while a soldier, he again engaged in active practice and his range of work embraced about every branch of the profession, but he never regained his former health.

DR. JOHN W. WRIGHT, a foreigner by birth and an alien from choice, was a citizen of Tuscola from 1858 to 1870, kept a drug store and practiced medicine, claimed to be a native of England. He was a man of intelligence and loved to talk of the magnificence and munificence of the British Empire. Just why the gates of Castle Garden never opened for his return to the land that he claimed he loved so well and why he never became an American citizen or his reasons for locating in an obscure western village, have been matter of conjecture. He removed from here to California.

DR. THOMAS WHEELER, born in London, a literary and medical graduate, a lover of books, birds, flowers, and a musician that, with favorable circumstances, might have rivaled a Mozart or a Theodore Thomas, was in Tuscola as early as 1858. He served during the Civil War as assistant surgeon. After peace was declared he went back to Indiana, whence he came and located in Bloomington.

DR. WILLIAM H. PEARCE, who came here from Urbana, Ill., in 1857 and located near Camargo, and Dr. Isaac N. Rynerson, who moved from Indiana and settled five miles southeast of Tuscola about the same time, were able and warm friends of the new county. Taking the initiative and assuming the aggressive, they were among its most efficient advocates. Both had been actively engaged in the practice of medicine prior to locating here, but neither entered the ranks of their profession again, but purchased and improved farms and turned their attention to agriculture while residents of this state. Dr. Rynerson lived only a few years, dying in the spring of 1873, while Dr. Pearce became an octogenarian, but removed from the county and lived elsewhere for a number of years.

The object of the writer has been to mention those physicians who resided here when Douglas County was organized (Dr. Bacon excepted), to write only of those with whom he had a personal acquaintance. If an omission has occurred it has been unintentional, and a hope is entertained that some one will correct mistakes and supply additional historic



facts at no distant date, as reliable data have not been accessible in some cases.

Of the physicians who were here when the county was formed, one-half of them served in the Union Army during the Civil War, and all have unblemished records in helping to preserve the grandest republic of all the ages, lived in the many changes of time's greatest century and after the great rebellion had passed into the silence of history they have gone to their rewards.

#### BIOGRAPHICAL SKETCH BY DR. JOHNSTON

JAMES LEE REAT, M.D., was born Jan. 26, 1835, in Fairfield County, Ohio, and when 4 years of age removed with his parents to Coles County, Ill., where he spent his boyhood days and divided his time between farm-work and attendance at the neighborhood schools. Some of these were subscription schools and taught in log school houses. Later he attended an academy in Charleston, Ill., where he was given an opportunity to study some of the higher branches. On reaching young manhood he devoted some time to teaching. Finally he took up the study of medicine and in 1858 graduated from the Cincinnati Medical College. Later he supplemented his medical studies by taking a course of lectures at Rush Medical College, Chicago, and from this institution received the degree of M.D. in 1877.

In 1859 he located at Tuscola, Ill., which at that time contained only a few houses, though it was the new county seat of the then new County of Douglas. Feb. 19, 1861, he married Miss Sallie C. Callaway, who became the mother of four children, three of whom are living to-day in mature life. Mrs. Reat died in the latter part of the year 1910.

In 1861 the Civil War broke out and in 1862 Dr. Reat left his young family for Louisville, Ky., where he had been assigned to duty among the troops as assistant surgeon of volunteers. In March, 1863, he was commissioned assistant surgeon of the Twenty-First Illinois Infantry, the regiment in which General Grant saw his first Civil War military service, and of which he was colonel in 1861. In 1864 Dr. Reat became full surgeon of the Twenty-First with the rank of major and served till the early part of 1868 when he was mustered out and returned to civil life. Most of his military service was with the Army of the Cumberland, but when hostilities between the North and South ended, his command became part of the army of 50,000 veteran soldiers that under General Sheridan was sent to the Rio Grande to protect the Texas frontier and watch the movements of the French soldiers under Maximilian.

Returning to Tuscola in 1866, Dr. Reat busied himself in picking up the threads of the practice he had dropped, nearly four years before, to serve his country. He is now the oldest practitioner in Douglas County; has always kept himself well abreast in his profession and has at all times had the esteem and good will of his competitors for the good reason that he is a good practitioner of medicine and is, moreover, the very soul of honor in all that pertains to his dealings with his colleagues. He is one of the organizers and for many years a member of the Douglas

County Medical Society. For more than forty years he has been a highly esteemed member of the Æsculapian (District Medical) Society. Furthermore, for a long period he has been prominent in the Illinois State Medical Society and served his time as a member of the judicial council of that organization. For twenty-seven years he was a member of the Douglas County board of medical pension examiners.

In politics Dr. Reat has always affiliated with the Republican party, but his general fairness and breadth of view has at all times kept him from being a narrow partisan. He is a life-long member of the Methodist Church, and as a good citizen in the community has always stood for civic righteousness.

Dr. Reat has written many papers, both lay and medical, and whatever has come from his pen never fails to show two characteristics of care and thought.

Dr. Reat's grandfather, James Reat, came from Scotland to America during the War of the Revolution and not long after his arrival enlisted as a soldier and served under Washington. His father, also James Reat, was born in Maryland, and his mother, Susannah Rogers, was a native of Virginia.

Dr. Reat is of a studious turn of mind, is a reader of good literature and spends much of these days of a green old age immediately at the homestead in Tuscola, and of this he recently wrote: "At the old home the flowers bloom just as brightly, the birds sing just as sweetly, for the idolized mother, now in heaven, has hallowed it."

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## ANALYSIS OF THE WEBER TEST IN ONE HUNDRED CASES \*

ROBERT SONNENSCHN, M.D.

CHICAGO

The idea underlying this investigation and the purpose which animated it, was the desire to see which fork or forks give the most reliable results in routine work. Most men cannot take the time (even if they have the full equipment), to use all the forks; therefore, one or two are needed which will serve to give fairly definite information in rapid examinations.

The Weber, Rinné and Schwabach tests were made in all the cases, but as this report is confined to the discussion of the Weber, we will at this time not go into any details regarding the other two tests, nor the forks employed in making the same, but will reserve their analysis for a future date.

Let me, however, call attention to a fact which has always caused confusion in my mind when reading reports of cases and examinations, and which probably also has at times caused others to be uncertain regarding the fork actually used by the men making such reports; and that is the proper designation of the so-called c, Edelmann fork. Now so far

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\* Read before the Chicago Laryngological and Otological Society, Feb. 21, 1911.

as I could gather from personal inquiry and correspondence with various men, they seem to assume that the  $c_1$  fork is such with the weights attached. This is a mistake; the fork *unweighted* is  $c_1$  with 256 vibrations, but when the weights are placed at the first line marked on the prongs, the fork has the tone of dis (d sharp) with 154 vibrations. In order to have absolutely indisputable evidence of this fact Edelmann was written to and confirmation of this statement obtained.

Omission of the exact description of the fork employed may thus give a false impression to the reader, in view of which fact we have designated this fork as "weighted  $c_1$ ," thus making it clear that used as such it had the tone dis or d sharp (154 v. d.) and *not*  $c_1$  with 256 vibrations.

Inquiries addressed to a considerable number of the best-known European otologists with reference to the fork used in the determination of the Weber test, and the manner of applying it brought a variety of answers. Panse (Dresden) and Moeller (Copenhagen) use  $a_1$  (435 v. d.) unweighted. Schmiegelow (Copenhagen), Denker (Erlangen) and Siebenmann (Basel), employ both  $a_1$  (435) and A (108 v. d.) forks. These are unweighted. Heimann (Warsaw) and Bruehl (Berlin) use  $c$  (128 v. d.), weighted. Hartmann (Berlin) uses  $c$  (128) without stating whether weighted or not. Kuemmel (Heidelberg) employs  $c$  unweighted. He lays no weight on the Weber and uses it only exceptionally. Alexander (Vienna), Uchermann (Kristiania), Politzer (Vienna), Passow (Berlin) and Neumann (Vienna) use  $c_1$  (256) all of them weighted, except Uchermann. Politzer says he often uses  $c$  (128) at the suggestion of Bruehl. Urbantschitsch (Vienna) uses  $C_1$ ,  $c_1$  and  $c_2$  forks for the various tests, but does not specify just which one for the Weber. These forks are unweighted. Lucae (Berlin) pays little attention to the Weber, and does not use it for diagnostic purposes.

Regarding the place at which the fork is set in making the Weber test the following replies were forthcoming: Panse, Schmiegelow, Moeller, Bruehl, Denker, Siebenmann, Uchermann, Passow, Kuemmel (when he does employ it), and Neumann choose the vertex. Heimann places the fork on the vertex, occiput, root of the nose and rarely on the mastoid processes (!). Urbantschitsch employs the root of the nose as well as the vertex in the examination. Alexander says he usually employs the middle line of the vertex, and only in cases where the result is uncertain does he place the fork in the middle of the forehead, the upper row of teeth or the inferior maxilla. Politzer first sets the fork on the vertex and if no definite finding is had, places it in the middle line of the lower jaw or the occiput. In connection with some of these localities Professor Schaefer (Berlin) calls attention to the fact that when the fork is placed at the root of the nose or on the chin the tone is made louder because the mouth and naso-pharynx act as resonators.

The foregoing plainly shows the lack of uniformity regarding the pitch employed, or the nature of the fork used, i. e., whether weighted or not. Add to this the fact that so many men in their writings do not state whether a certain fork which they have in mind is weighted or not (some of them even on direct inquiry not defining their position), and it



will appear at once how indefinite is the information we often receive in reading reports of cases, etc. It is no doubt true that so far as practical results are concerned, it probably makes no great difference whether a fork is weighted or not, or whether we are informed exactly regarding the nature of the fork when the Weber test is made; whereas, in the Rinné it does make a considerable difference as we will endeavor to show in a later paper. But even granting for argument's sake that the different forks do not vary sufficiently to affect the practical results of the tests, surely the first requirement of scientific work would demand that accurate statements be at all times made by investigators regarding the instruments they employ. Furthermore, merely mentioning the fact that a fork is weighted or not will exactly designate the one used, will thus convey a clear idea to the reader, and certainly calls for no great effort on the part of the writer.

Our tests were made on 100 unselected cases. My sincere thanks are due Prof. Paul Gerber, director of the University Nose and Throat Clinic in Königsberg (Prussia), who allowed me to use patients of his Krankenkasse for this purpose.

The forks used in these examinations were the unweighted  $a_1$  (435 v. d.), the weighted  $c_1$  (154 v. d.), and the unweighted A (108 v. d.) forks of Edelmann. There being no  $c_4$  (2,048 v. d.) fork available at the time a  $fis_4$  (f sharp) (2,880 v. d.), of unknown make was employed for the high tones. The first three forks mentioned were chosen because the  $a_1$  and A are those employed and recommended by that master of functional testing, Bezold, and the weighted  $c_1$  (either an Edelmann or a Reiner fork), because it is the one used in the Vienna Clinic to so great an extent.

The method of examination consisted in obtaining the facts regarding the patients' history, including age, occupation, etc.; and then testing them in an isolated, quiet room. First the whispered voice was tried on both ears, then conversation, then application of the watch to the mastoid processes, then the  $fis_4$  fork by air conduction (three gradations of intensity of sound being used, produced by [1] exhaling strongly on the fork, [2] by rubbing the prongs with the fingers, and [3] by striking the fork with the finger nail). The Weber test was then performed with each fork on both vertex and forehead. Lastly the Schwabach and Rinné were made.

In order to have uniformity in the duration of vibration, the forks were always made to functionate by holding them at right angles to the body, and allowing a small rubber pleximeter to fall from a perpendicular position directly on one of the prongs. The hammer was allowed to fall of its own weight. The forks were held as loosely as possible by the stem and permitted to rest on the head without any pressure other than that due to the weight of the fork. Where any uncertainty seemed to exist in the mind of the patient the tests were repeated many times, care being taken to avoid all suggestions. The difference between hearing a fork and feeling its vibrations was carefully explained to each individual, and

demonstration made by placing the vibrating forks on the patella, fingers and elsewhere.

#### ANALYSIS OF THE WEBER TEST

I. Weber alike when fork placed either on vertex (v) or forehead (f):

Fork A (108) in 89 cases; Fork  $c_1$  weighted (154) in 85 cases; Fork  $a_1$  (435), in 85 cases.

(This includes 22 cases of normal ears, or where at least there was no apparent lesion.)

II. Weber "in head" (i. e. not lateralized) with forks on either forehead or vertex (includes apparently normal ears).

Fork A in 32 cases; Fork  $c_1$  weighted in 33 cases; Fork  $a_1$  in 37 cases.

III. Weber to one side if fork on *vertex*, and other side when on *forehead*; or to one side in one position, and "in head" in other position of fork.

Fork A in 11 cases; Fork  $c_1$  weighted in 15 cases; Fork  $a_1$  in 15 cases.

Those giving one place "in head" and other to one side: A=cases 5, 40, 63, 64, 65=total 5 cases;  $c_1$ =cases 58, 69, 96,=total 3 cases;  $a_1$ =cases 8 and 10.=total 2 cases. Urbantschitsch recently called attention to this fact of the position of the fork influencing the lateralization.)

IV. Weber going to the side with middle ear trouble; i. e., in cases where the Weber goes to the same side whether fork is on vertex or forehead. Or fork goes to that side in bilateral middle ear disease which has (1) longer bone conduction, or (2) which is the worse side.

Fork A, in 26 cases; Fork  $c_1$  in 23 cases; Fork  $a_1$  in 24 cases.

V. Weber going to *better* side in nerve disease; i. e., in cases where same side with fork in either position (v. or f.).

Fork A, in 14 cases; Fork  $c_1$  in 12 cases; Fork  $a_1$  in 9 cases.

VI. Weber going to side *contrary* to the one expected considering the apparent lesion (m=middle ear; n=nerve disease, o=no apparent lesion).

Fork A in 16 cases; m in 8 cases, n 3 cases, o in 3 cases, m and n in 2 cases.

Fork  $c_1$  in 17 cases; m in 8 cases; n in 4 cases; o in 3 cases; m and n in 2 cases.

Fork  $a_1$  in 17 cases; m in 10 cases; n in 4 cases; o in 1 case; m and n in 2 cases.

VII. Weber going to either side, i. e., one side with fork on vertex, to the other side with fork on forehead, where there is bilateral disease. Number of cases = 11.

VIII. Weber to either side, depending on position of forks, in cases of unilateral disease; number of cases = 8.

IX. *Different forks* giving different *sides*, irrespective of *position*. Number of cases = 15.

X. Great irregularity in lateralization of the Weber in 8 cases.

XI. Where Weber goes to either side (depending on position of forks), (a) The one going to the side *expected* from nature of lesion:

Fork A on v=4 cases f=3 cases, total 7 cases; Fork  $c_1$  on v=2 cases, f=6 cases, total 8 cases; Fork  $a_1$  on v=3 cases, f=6 cases, total 9 cases.

(b) The one going to *unexpected* side: Fork A, on v = 3 cases, f = 2 cases, total, 5 cases; Fork  $c_1$  on v=6 cases, f=2 cases, total, 8 cases; Fork  $a_1$  on v = 6 cases, f = 2 cases, total 8 cases.

N. B. In a number of cases where *bilateral* disease was present it was impossible to say whether Weber went to expected side or not. (e. g. cases 53, 56, 57, and 70.)

XII. Weber to *one* side even though both sides have apparently same amount of lesion, or where no lesion at all.

Fork A in 7 cases; Fork  $c_1$  in 8 cases; Fork  $a_1$  in 6 cases.

XIII. Weber "in head" despite unilateral disease (at least doing so in one position, i. e., vertex or forehead).

Fork A in 7 cases; Fork  $c_1$  in 4 cases; Fork  $a_1$  in 6 cases.

XIV. Weber "in head" with bilateral disease:

(a) middle ear disease—Fork A in 5 cases; Fork  $c_1$  in 6 cases; Fork  $a_1$  in 6 cases.

(b) in nerve disease—Fork A in 5 cases; Fork  $c_1$  in 5 cases; Fork  $a_1$  in 7 cases.

XV. Normal or better said negative ears (where at least no definite lesion could be diagnosed), showed in 26 cases:

(a) Weber "in head" both on vertex and forehead in 20 cases.

(b) Weber to right side on forehead and vertex, 1 case (53).

(c) Weber to left side on forehead and vertex, 1 case (56).

(d) Weber irregular as to lateralization in 4 cases (42, 57, 69 and 97).

In all the above tables the  $c_1$  was the weighted Edelman fork.

Some of the phenomena and facts noted during the examinations besides those given above are as follows:

(1) It is difficult to avoid pressure when holding the fork against the forehead unless the head is bent far backwards. The result from the use of a fork on the forehead varies greatly with any change in pressure so far as intensity of tone is concerned. On the vertex the heavy A fork rests easily, its pressure, however, being very uncomfortable, if not painful to many patients.

(2) Sometimes the A fork is not heard at all, or only with great difficulty. Ignorant patients can hardly state definitely whether fork is heard or only felt.

(3) When the hair was abundant and thick most patients heard the forks better on the forehead and vice versa; but in some rare instances they heard better on the vertex despite thick hair (49).

(4) Aside from the question of thick or thin hair most of the persons heard the forks louder and longer when placed on the forehead, but this is not of importance in the Weber test.

(5) With the  $a_1$  fork one cannot always be certain that it is really heard via bone, and not via air conduction, at least during the first few seconds of its application. Particularly when struck hard (which was purposely done at times in repeating the tests in order to see whether the results would vary), the fork was heard practically only via air. If struck as lightly as the other forks it at times could barely be heard through the cranial bones, and if very lightly struck was not at all heard when placed on the head.

Now by way of summary we may say:

In most cases (85 to 89 per cent. depending on the fork used), the Weber was the same with the forks on either the vertex or forehead; in only 11 to 15 per cent. did the position make a difference.

As regards the nature of the lesion:

While in most cases the lateralization was to the poorer side in conduction disease and to the better side in nerve affection, still in 16 to 17 per cent. of cases the Weber went to the side contrary to the one expected from the nature of the lesion.

The Weber was "in the head," i. e., not lateralized at all, in 32 to 37 per cent. of cases (depending on fork used), including 20 normal cases.

Weber was referred to either side depending on *position* of forks in 11 cases of bilateral, and 8 cases of unilateral disease.

In fifteen cases different forks gave Weber on different sides irrespective of position of forks.

In eight cases there was great irregularity in the lateralization of the Weber.

In six to eight instances (depending on forks used) Weber was lateralized even though *both* sides had apparently same amount of lesion or no lesion at all.

Weber was "in head" despite unilateral disease in 4 to 7 per cent. (varying with forks used), and in 5 to 7 per cent of cases of bilateral disease.



## CONCLUSIONS

1. The *position* of the forks as regards vertex or forehead is apparently of some importance (11 to 15 per cent. in this series showing a difference).

The forks are usually heard longer and louder on the forehead, and especially so when the hair on the vertex is thick.

2. The dependability in reference to lateralization does not seem to vary much with the different forks used in these examinations.

The disadvantages of the A fork lie (1) in its great weight which, while allowing it to be easily rested on the head, sometimes causes discomfort or even pain, and (2) the difficulty of distinguishing between feeling and hearing it.

The disadvantage of the  $a_1$  fork lies in the fact that unless struck rather hard it is not distinctly heard on the vertex, and when thus struck is often heard only via air, thus at times giving a wrong result unless this fact is especially noted.

The weighted Edelmann  $c_1$  fork seems to have the good qualities of both other forks (as regards duration of vibration, etc.), without the above-mentioned disadvantages. There is a difference between the A fork (108 v. d.) and the *weighted*  $c_1$  fork (154 v. d.) of only forty-six double vibrations.

These statements, however, refer only to the use of these forks in making the Weber test.

One hundred cases constitute a rather small number, yet judging by these it is perhaps not presuming too much to say that the Weber test:

1. Confirms the diagnosis in many cases when used in conjunction with and when agreeing with the results obtained by the other functional tests.

2. That it is of no aid in some cases.

3. And that it even causes uncertainty in some instances, owing to its great variability and tendency to contradictory results.

Heyworth Building, 29 E. Madison Street.

## DISCUSSION OF DR. SONNENSCHN'S PAPER

Dr. Holinger: If Dr. Sonnenschein in his paper "Analysis of the Weber Test in 100 Cases," tries to prove that this test is often unreliable he carries coal to Newcastle. Bezold in his text book says "More reliable than Weber's test, etc.," so I do not know what the Doctor's intention is. He does not give any literature on the subject. If on the strength of this analysis he tries to condemn the test entirely, he is wrong. Only the other day a lady was examined complaining of hard hearing in one ear, dizziness, headaches, etc. Other tests made me suspicious of brain tumor. This suspicion was emphasized by the total absence of bone conduction as revealed through Weber's test.

Even if this test is not absolutely reliable we try to get as much out of it as we can. In order to do that I would advise the following precautions. Always put the tuning fork on the vertex, but in doing so avoid the sutures of the bones of the skull as they are usually more or less sensitive to pressure of the steel handle of the fork. Furthermore use tuning forks without weights. They sound longer and often a patient who is uncertain in the beginning, when the fork sounds loudly, gives quite reliable information when the sound slowly dies away.

Another reason for this advice is that a tuning fork with weights shakes much more and the patient has more difficulty in distinguishing the sound from the feeling of vibrations. I almost exclusively use an A fork, exceptionally an a' c' is only three tones from A. These are the directions of Prof. Bezold. That others with all kinds of deviations from these rules get less reliable results is not surprising, but it is unfortunately a fact that so many critics of Bezold's work have changed the premises of his experiments to suit themselves and afterwards from the result of these changed premises have criticized the conclusions and results that Bezold obtained.

The clinical value of Weber's test can only be considered in connection with the other tests. Rinné's and Schwabach's test and the lower sound limit.

Dr. Shambaugh: Dr. Sonnenschein's work has brought out clearly two important facts in the Weber test. The one is its uncertainty and the second is its unreliability. In both of these regards the Weber test is inferior to the other tuning fork tests. Theoretically the Weber test is the simplest and should be the most useful of all the tuning fork tests, but unfortunately its application has the handicaps pointed out.

In regard to the uncertainty of lateralization, I always use the A and the a' Edelmann forks and when the response is unsatisfactory I also use the C. The difficulty in distinguishing between the jarring of the larger forks and actual tone perception is not a drawback. I would place as much confidence in the statement that the fork is felt in the ear as though it were heard. A practical point of some importance is that when the fork is sounding loudly the patient may fail to recognize the lateralization which can be made out distinctly as the fork begins to die out.

A practical point in applying the Weber test that we must always keep in mind is that the patient expects to hear the fork in the better hearing ear and when there is uncertainty as to lateralization the patient is much more likely to state that the fork is heard in the better hearing ear. If the patient volunteers the statement that the fork is heard in the deafer ear this can be accepted with much more confidence. There are a few cases, however, where the Weber is lateralized distinctly in the affected ear and where the defect in hearing is due to nerve deafness. Cases, for example, of tumor of the acoustic where this phenomenon is observed has not, I think, been satisfactorily explained.

Occasionally in cases of marked deafness one observes the lateralization of one fork to one ear and of another fork to the opposite ear. Such findings have often caused confusion in interpreting the Weber test. I have studied several cases of this sort where the A fork is lateralized to one ear and the a' fork to the opposite. These are usually cases of advanced otosclerosis where in addition to the ankylosis of the stapes the cochlea itself is more or less extensively involved. The explanation of the divergent result with the two forks appears to be that the A is lateralized to one ear because of the fixation of the stapes. The a' is lateralized to the opposite ear because the degenerations in the cochlea have lowered the perception for this higher fork.

There is one class of case where the Weber test is the ideal one for establishing the diagnosis between obstruction in the middle ear and disease of the labyrinth. These are the cases of advanced unilateral deafness with the normal hearing on the opposite side. In these cases all of the other tuning fork tests leaves us in the lurch. The Rinné test will always be negative irrespective of whether the defect is due to a fixation of the stapes or degeneration of the labyrinth. The Schwabach test gives little assistance since even in cases of complete labyrinthine deafness the duration of bone conduction from the mastoid on the affected side is usually practically as long as from the well ear. In attempting also to apply the test for defect at the upper end of the scale we meet again with the great difficulty of excluding the normal ear. If we use the noise apparatus of Baroney we drown out in a measure the hearing in the ear we are examining. If we attempt to exclude the normal ear by the method of rubbing the ear with the palm of the hand we fail to exclude this ear.

Dr. Sonnenschein (in closing) emphasized the fact that this series of tests was made, as expressed in the opening of the paper, for the purpose of furnishing the writer with a more definite idea as to the practicability of certain forks in routine work. The purpose was not to attempt to discredit the Weber test, nor are the conclusions arrived at in this thesis ones which would condemn that test, as was assumed by two of the gentlemen who discussed the paper. However, in the results obtained in the 100 carefully examined cases one sees the fact once more demonstrated that the Weber test has a tendency very often to show unexpected and irregular reactions at times depending upon either: (1) the actual lesion present; (2) the different forks employed, or, (3) the part of the head on which the fork was placed.

Dr. Shambaugh's point regarding otosclerosis as the condition usually present when the Weber is differently lateralized with the various forks is a valuable one; unfortunately there were not enough such cases in this series to allow any conclusions with reference to this idea.

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A TEXT-BOOK OF MEDICINE FOR STUDENTS AND PRACTITIONERS. By Dr. Adolph V. Strümpell, Professor of Special Pathology and Therapeutics at the University of Leipsic. Fourth American Edition, Translated by Permission from the Seventeenth Revised German Edition. With Editorial Notes, Additional Chapters, and a Section on Mental Diseases, by Herman F. Vickery, A.B., M.D., Instructor in Clinical Medicine, Harvard University, Visiting Physician to the Massachusetts General Hospital, Etc., and Philip Coombs Knapp, A.M., M.D., Ex-President of the American Neurological Association, of the New England Society of Psychiatry, and of the Boston Society for Psychiatry and Neurology; Clinical Instructor in Diseases of the Nervous System, Harvard University; of Medicine, of the Massachusetts Med., Etc. With six plates, three of which are in color, and 224 illustrations in the text. In two volumes. D. Appleton and Company, New York and London. Price \$12.00.

Professor Strümpell's Text-Book has now reached the seventeenth edition in Germany, and this is the fourth American edition. Ten years have elapsed since the last American edition of this masterpiece on medicine was issued. Strümpell has in the meantime removed from Leipzig to Vienna, where he now occupies one of the historical chairs in that great university. As Strümpell himself acknowledges he has devoted more space and attention to diseases of the Nervous System than to any other branch of the practice, but readers will find those portions devoted to other departments equally exact and up to date. He throws new light on every subject which he considers, and Strümpell's work remains at the head, where it has stood since the first edition was issued many years ago. The fact that it has been translated into eight foreign languages, marks the work as almost unique in the history of medicine. Drs. Vickery and Knapp have made an admirable translation which has been enlarged by chapters on four diseases, Malta Fever, Rocky Mountain Fever, and Pellagra, besides brief accounts of commoner forms of mental diseases not already discussed by the author. All of our readers should possess this excellent work of Strümpell.

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## THE JOURNAL INDEX.

Our readers will find bound with this issue the index for the nineteenth volume of THE JOURNAL. It is especially complete and good. Only those who have grappled with the problem of an index can appreciate the labor of preparing a complete summary of the contents of one of our volumes. When completed, there is nothing to indicate the labor expended on its preparation. As far as our observation goes, this JOURNAL furnishes an index superior to any monthly journal in existence. This it will continue to furnish if the members demand it. Therefore, please let us hear from you. The index was prepared by the Indexer of the Morgan County Medical Society Library at Jacksonville.



# ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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JUNE. 1911

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## THE AURORA MEETING

The sixty-first annual meeting of the Illinois State Medical Society was held, according to the announcement. Tuesday, Wednesday and Thursday, May 16, 17, 18, 1911.

The Society met for the first time in Aurora, a city of more than 30,000 inhabitants, beautifully situated on both banks of the Fox River. Aurora is one of the few cities in the state to show a substantial growth in the past decade, and for this the enterprise of its citizens and the beauty of its location is undoubtedly responsible. Every one attending was made welcome, and provided with accommodations. The hotels, while not adequate to accommodate the crowd, did the best they could, and did not overcharge their guests. The Hotel Arthur, with a beautiful outlook on the river, has located its dining-room in the basement, and made it almost completely air tight. This was particularly noticeable, and disagreeable because of the unusual heat prevailing during the session. Another story should be added to the hotel, and the dining-room placed on the upper floor. The outside restaurants and ladies of the Methodist Church did much to relieve the congestion of the hotels at meal times. The members of the profession were constantly at work providing for the comfort of the visitors.

The registered attendance was about 500. This was good for our society but it is not what it should be by any means. The Dental Society with 2,000 members has an annual attendance of 800 to 1,000. We should have an attendance of not less than 1,000. That number should

come to Springfield next year, where the hotel accommodations will be ample to care for them.

The papers presented at the secretary's conference and the scientific sections were excellent, and provoked good discussions. The exhibits were ethical, clean and so placed that every one in attendance was obliged to pass through the room and come in contact with the exhibitors. Scientifically and socially the meeting was a great success.

We now come to the House of Delegates, which at this meeting as at Danville, was the center of interest. The first session was supposed to begin at 8 p. m. Tuesday. There was a large attendance. The committee on credentials had been appointed some two weeks before by President Cotton. Dr. Weis, the permanent secretary of the Society, always heretofore on this committee, well posted on the names and credentials of the delegates, was not appointed on the committee by the president. Dr. Harvey of the Chicago delegation was chairman of this committee, and the lists submitted were evidently gone over with a fine-toothed comb. A number of country delegates had submitted credentials signed only by the secretary, and were passed as valid by the committee only after a long period of consideration. We mention this particularly in order that in the future the country delegates may be certain to have their credentials complete in every respect. We believe that no one was actually thrown out, but much of the delay in calling the session to order was occasioned by the quibble on this point.

Cook County appeared with twenty-nine delegates or the representative of 2,175. Query: Had that number of members actually paid dues, or was a large proportion of them paid for out of the funds of the Chicago Medical Society? This of course interests both the members of the Chicago Medical Society and the members of the State Medical Society. It is up to the Chicago Medical Society itself to determine whether this means of paying state dues of its delinquents is a proper use of the funds of Chicago Medical Society. The object of course was to get a large delegation in the House of Delegates.

The chairmen of the standing committees were not certified to at this session, this for the alleged reason that there was a question as to who was the chairman of the Committee on Medical Education. Although there was no question as to the rights of other chairmen, the committee saw fit to hold up the whole number (eight) because of this. This was only one of the matters concerning which there was a reasonable cause for complaint, and yet for the sake of harmony and the dispatch of business it was allowed to go by unprotested.

The House was finally called to order about 10 p. m., and the chairman declared the first order of business to be the approval of the minutes of the last annual meeting. What promised to be a long struggle was terminated on the motion of Dr. W. O. Ensign, to omit the reading of said minutes. During the discussions Dr. Ensign, who was many years ago president of the Society and who has attended almost every meeting for the past forty-five years, stated that the action of the insurgents at the close of the Danville meeting was a disgrace such as had never before been seen at any of the meetings of the State Society.

The vote on his motion was about fifty-four to forty, which was approximately the vote all through the evening. It might be well to analyze this vote. Thirty of the forty votes were cast by President Cotton and the twenty-nine delegates of the Chicago Medical Society. Bosses Lorimer or Sullivan never had more obedient henchmen at a state political convention than did W. L. Noble, J. A. Robison and A. M. Corwin, the leaders of the Chicago delegation. It will thus be seen that about ten counties sent delegates who were tied up with the Chicago representatives. Among these we noticed C. E. Crawford of Rockford, representative of Winnebago County Society, and inspector of the State Board of Health; F. C. Gale of Pekin, representative of Tazewell County; C. B. Caldwell of Lincoln, assistant physician to the State Institution, representing Logan County; and O. B. Edmonson of Clinton, representing De Witt County; C. F. Burkhardt of Effingham, representing Effingham County; E. P. Sloan of Bloomington, representing McLean County. This leaves four others whose names we failed to get. Drs. Edmonson, Sloan and Caldwell did not always vote with the insurgents.

The Chicago delegation had been hand picked, trained, instructed and showed no variation in their votes. One man could have answered for the whole delegation. On the other hand, no concert of the country delegates had been arranged. Each county society acted on its own volition. In fact, some of them were caught napping and were represented by a delegate who, we were assured, did not really represent the sentiment of the society. Notwithstanding this the down state men stood almost united against the disturbers, and the result was shown finally when the only man they put over was Ferguson, who was elected delegate to the A. M. A., and this was done in a manner scarcely legal, as we shall elsewhere show. One Chicago delegate, O'Malley, was in Aurora during the entire meeting but never appeared at the meeting of the House. Dr. O'Malley informed us after the adjournment that he had been "appointed a delegate by proclamation," whatever that might mean.

The next order was the report of the Committee on Medical Education, which was represented by Drs. Mammen and Percy. Dr. Percy had spent a great deal of time not only this year but in previous years on this subject. He was thoroughly familiar with the conditions existing in Chicago, and with the intimate relation existing between the low grade schools and the State Board of Health. He did not mince words in his report. He told the truth as he saw it. He did not hesitate to express his belief that certain men sitting in the Chicago delegation were there solely to look after the interests of these schools and to defend the misdeeds of the State Board of Health. He might with truth have said more, he could have spoken more discreetly, but the wrath of years was pent up in his soul and he spoke it out. It caused a pallor to appear on the faces of some of the city delegates. It caused a storm to break when the reading was complete. Delegate Crawford, representing the State Board of Health, immediately moved to table the report. The vote was decided negatively by the president. The next move was to strike out all reference to the Chicago Medical Society. Percy and Black agreed to



this if the matter might then come to a vote. This was agreed to by some of the Chicago delegates and it was so ordered. But the agreement was not kept and other parts were immediately attacked. Motions to adjourn and amendments were offered, all of which were voted down by substantial majorities to all ears except the president's, who called each time for a standing vote and a roll call was about to be taken, when a slip was made followed by a motion to adjourn, which was declared carried at 12:15 a. m. This left the report of the Medical Education Committee before the house as unfinished business. It never was allowed to come up again and to that extent its enemies scored a victory. It was a barren victory, however, as the report soon became public property, and caused wide comment. It will prove to be another broad plank in the barrier which is being surely erected against the fraudulent and deficient medical schools, and the professional greed and official graft which makes them possible. To this extent the Percy report has done its work. Percy attacked the present organization of the Chicago Medical Society, and his information on this point came from good sources. Whether it was good judgment to bring this matter to the front we will not say. The election of officers of that great society, soon to be held, should determine whether all the tales of the past two years have been sufficient to bring about a revolution which, if one-half of what is told is true, seems much needed.

The meeting of Wednesday was called for the purpose of offering amendments to the constitution by the Chicago delegates. These delegates had loudly proclaimed the eight reforms they proposed to secure. They had even had a circular letter mailed to all members of the State Society and distributed everywhere in Aurora containing a platform, and signed by 102 persons, a number of whom afterward denied the signatures. When it came to a show down only one of these was in evidence. Concerning this we shall have something to say in the future. But if the constitution was to be changed there were other real amendments necessary, and these were introduced by Chairman Black. This meeting closed without further incident.

The final session of the House of Delegates convened Thursday at 9 a. m. The constitution provides that the election of officers shall be the first order of business, and this was taken up with the following results:

#### PRESIDENT-ELECT

L. H. A. Nickerson, Quincy.....	52 votes
J. W. Hamilton, Mt. Vernon.....	50 votes

#### FIRST VICE-PRESIDENT

J. W. McDonald, Aurora.....	unanimously
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#### SECOND VICE-PRESIDENT

J. E. Miller, Danville.....	unanimously
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#### SECRETARY

E. W. Weis, Ottawa.....	54 votes
C. F. Burkhardt, Effingham.....	48 votes

## COMMITTEE ON PUBLIC POLICY

F. P. Norbury.....	Kankakee
W. L. Baum.....	Chicago

## COMMITTEE ON LEGISLATION

C. J. Whalen.....	Chicago
L. C. Taylor.....	Springfield
M. S. Marcy.....	Peoria

## COMMITTEE ON MEDICAL EDUCATION

E. P. Sloan.....	Bloomington
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## DELEGATES TO THE A. M. A.

E. J. Brown.....	Decatur
H. T. Patrick.....	Chicago
A. H. Ferguson.....	Chicago

## ALTERNATES

Clifford U. Collins.....	Peoria
Samuel C. Stremmel.....	Macomb
George S. Rainey.....	Salem

## MEMBERS OF THE COUNCIL, TERM EXPIRES 1914

J. W. Pettit.....	Ottawa
E. B. Cooley.....	Danville
J. H. Stealy.....	Freeport

For the position of delegate to the A. M. A. to serve two years, five gentlemen were named and the result of the first ballot was: E. J. Brown, fifty-nine votes; H. T. Patrick, fifty-nine votes; A. H. Ferguson, fifty-three votes; Thomas A. Woodruff, fifty-three votes; J. A. Robison, forty-eight votes. It was here that President Cotton perpetrated his monstrous blunder. We speak of this in a separate article to which we refer our readers.

Dr. L. C. Taylor was called on to give the report of the Committee on Legislation. Dr. Harold N. Moyer was called on to give his report as chairman of the Medical Defense fund. Dr. Moyer's remarks will be well worth reading. He declared that no member of the Illinois State Medical Society had paid a single dollar out of his own pocket for defending a suit for mal-practice. The insurance companies had in several instances gladly paid the expenses of the witnesses, and Dr. Moyer had consented to this, as it helped to keep the funds of the Society intact for use in other cases. C. F. Burkhardt of Effingham arose at this point and said that the insurance company in which he held a policy had paid all the expenses of his trial, and the State Society had paid out nothing. Dr. Burkhardt won his case but was opposed to making further payments into the Medical Defense fund.

A vote of thanks was given the profession and the people of Aurora. Springfield was chosen as the next meeting place. A vote of endorsement was given to the appropriation for the medical department of the University of Illinois.

At this time Dr. Cotton surrendered the chair to the second vice-president and addressed the House. He took occasion to make disparaging remarks regarding Dr. J. W. Pettit, who counts his years by nearly half a score less than the venerable Cotton. We understand that Dr. Cotton's remarks are likely to have an effect quite unexpected to him. Dr. Cotton was requested several times to call for the reading of the report of the Council, and promised to do so. His rambling remarks were apparently timed to prevent the reading of this report. This report prepared by Chairman Black will, however, appear in the proceedings. At 12:30 the House adjourned *sine die*.

The official minutes will appear in the next issue of THE JOURNAL. We will next month take up the consideration of certain phases of the meeting.

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### THE MEDICAL TRUST

Dr. J. A. Witherspoon of Nashville, in his presidential address at the recent meeting of the Tennessee State Medical Association makes the following statement regarding a subject which has been much agitated by certain Illinois members of the profession:

*"Fellows of the Tennessee State Medical Association:* There is not a man sitting here to-night, engaged in the practice of medicine, who does not know that this particular claim that is being urged all over this country about the medical trust and the American Medical Association being the father of it is ridiculous, is so absolutely preposterous that no sane man would use it as an argument except for evil purposes of his own. I will tell you why that name was given it, because for the first time that great body of organized doctors had the daring and the bravery to attack in the very citadel, the strongholds, these nefarious practices which have been carried on all over this country as if they were not only dictators to the people, but they have had the impudence to walk into a doctor's office with a little bottle of medicine and tell him how to treat every kind of disease without the slightest knowledge or idea of pathology, etiology or symptomatology."

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### PRESIDENT COTTON'S MISTAKEN DECISION

At the last session of the House of Delegates Thursday morning, May 18, President Cotton rendered a decision during the election of delegates to represent the Illinois State Medical Society at the meeting of the A. M. A., which was apparently wrong, and resented by the House. We have submitted the facts in this matter to the most experienced parliamentarian in the state, and have received the answer which follows. Imagine the turmoil that would have existed had such a decision been rendered against the insurgents.

*To the Editor:*—I have your letter of May 20, 1911, stating that at the meeting named three delegates were to be selected, that five candidates were nomi-



nated and a vote taken, the majority of such vote being required to elect. The five candidates were balloted on resulting as follows:

59 votes for Dr. B.

59 votes for Dr. P.

53 votes for Dr. F.

53 votes for Dr. W.

48 votes for Dr. R.

On the foregoing statement, assuming that both the 59 votes and the 53 votes were a majority of the total votes cast, I reach the following conclusion: Dr. B. and Dr. P. were elected. They each received a majority of the total vote cast. There could not be contest between these two because three delegates were to be selected. Each of the two candidates having received 59 votes elects both of them. There can be no contest between the two high men when three delegates are to be selected. The contest is between the two candidates each receiving 53 votes. To illustrate: If Dr. B. and Dr. P. and Dr. F. had received each 59 votes and Dr. W. and Dr. R. had each received 53 votes, or 48 votes each, there would have been no tie neither would a new election have been necessary. The three high men receiving 59 votes each would be the delegates to the convention, no contest existing between the three high men because there are three delegates to be selected, and all three being high are consequently chosen. Now to change the condition only illustrates further the strength of the situation. Two receive 59 votes each. They are certainly two of the delegates since those two received more votes than any other candidate or candidates. It then resolves itself into a question of who shall be the third delegate. In solving this Dr. F. and Dr. W. each have a like number of votes, viz.: 53. The selection therefore is on the selection of a third delegate, not on all three delegates. The correct ruling therefore would have been to have held two delegates chosen and the question of the third delegate would either have been decided by the Chair, himself, on the tie between the two 53-vote candidates or relegated to the convention to vote on the remaining three candidates, viz.: Dr. F., Dr. W. and Dr. R., to choose from such three remaining candidates the third delegate.

Yours truly, X.

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## BILLS OF INTEREST TO THE MEDICAL PROFESSION PASSED BY THE FORTY-SEVENTH GENERAL ASSEMBLY

The following are the titles of all bills passed by the last Legislature affecting in some way the medical profession.

Notwithstanding the industrious opposition of certain parties in Chicago, headed by one John Dill Robertson, the appropriation for the medical department of the State University was given \$60,000, which, while not all that was asked for, is still a sum sufficient to begin the work of constructing a model medical school. The one mill tax established for the university to be collected with the state taxes will soon yield \$3,000,000. When this is obtained it will enable the university authorities to carry on this great advance in an adequate manner.

The item referring to medical students, we believe, does not state correctly the intent of the bill. As we understand it, the intent of the bill is to provide for temporary license for hospital practice to one who has passed his school examinations, but has not yet received his diploma. This license to be valid only for eighteen months.

For charity expenses including taking over of Dunning by the state, \$6,000,000, to which may be added \$345,000 in anticipated fees by state board of administration.

Branch Hospitals.—Authorizes boards of county commissioners to establish branch hospitals. The bill backed by Peter Bartz and the Cook County Board, with intention of establishing three branch hospitals.

New Insane Asylum.—Authorizes the establishment of a new insane hospital in northern Illinois by the state board of administration, with a capacity of 1,500 patients, at a cost of not more than \$1,250,000.

Surgical Institute.—Creates a state institution for crippled children under 14 years of age, under supervision of state board of administration.

Tax.—Eliminates the hospital tax from the aggregate maximum of tax rate provided for cities.

Tuberculin Tests.—Prohibits city councils from enforcing the tuberculin test in regulating the sale of milk. Bill backed by the dairy interests adjacent to Chicago. This is the Shurtleff bill aided by the State Board of Health and bitterly opposed by Dr. W. A. Evans and the Chicago health department.

Births and Deaths.—Provides for payment of ten cents for each report to doctor reporting births and deaths to county authorities. Does not apply to Cook County, where such provision is already made.

Medical Students.—Amends medical act to provide for license to practice to non-graduates after eighteen months' experience in authorized hospitals.

For salaries for food inspectors, \$10,875.

Defectives.—Authorizes Chicago board of education to maintain schools for deaf, dumb, crippled, blind, submoral, convalescent and incipient children.

Nurses for Children.—Provides board of education may appoint nurses to take care of children.

Bathing Beaches.—Authorizes cities to condemn lands for bathing beaches or for recreation piers.

One Mill Tax.—Establishes an annual tax levy of one mill, to be collected with the state taxes, for the maintenance of the state university. The fund thus collected to be disbursed by the trustees and to be in lieu of substantial part of the appropriations for ordinary expenses by the legislature. Estimated to yield an annual revenue to the university of \$3,000,000.

Fees and Salaries.—Bill made necessary by Attorney General Stead's opinion that all fees from all state boards, departments, and commissions shall be turned into the state treasury. This bill was bitterly fought by the State Board of Health.

Publication of Crime.—Prohibiting the publication of the details of murders or other similar crimes.

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### OSTEOPATHIC DIPLOMAS WHILE YOU WAIT

The American College of Mechano-Therapy, 120-122 Randolph Street, Chicago, advertises in one of the leading monthlies a correspond-

ence course in this branch of osteopathy. First is announced a 100-page book on drugless healing free of charge in order to tell the reader all about Mechano-Therapy, the Recognized System of Drugless Healing which pays \$3,000 to \$5,000 yearly. In a few months by this system one can begin practicing mechano-therapy, an elevating and highly-paid profession for men and women, simpler and more comprehensive than osteopathy. Endorsed by physicians. A fascinating study easy to learn. "We teach you in your own home by mail or in class and guarantee success—an ordinary education and our course of instruction fits you for a professional life. 'Authorized' diplomas to graduates. Work absorbingly interesting. Vast opportunities for social and financial betterment. Special terms now. Write to-day for our 100-page book on osteopathy, eighty-four page illustrations. Prospectus sent free."

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### ECONOMY FOR DOCTORS' FAMILIES

Hon. James M. Graham of the Twenty-Second Illinois District informs us that the Department of Agriculture has issued a very interesting bulletin, No. 391, entitled "Economical Use of Meat in the Home." This bulletin is commonly known as the Cook Book of the Department of Agriculture, and contains many useful recipes. Mr. Graham will be glad to see that a copy of this bulletin is placed in every home in his district, and asks that we inform our readers of this offer. Address Hon. James M. Graham, House of Representatives, Washington, D. C.

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### DID THE SECRETARY OF THE STATE BOARD OF HEALTH AID MR. SHURTLEFF IN HIS ANTITUBERCULIN TEST CAMPAIGN?

The Chicago *Tribune* in an editorial on the low grade medical colleges took occasion to say that "it has no confidence in the State Board as at present constituted. It has several members, but is practically a one-man concern," . . . closing with the following sentence: "It would not, like the present Board, use the time which it should have employed in driving or keeping quacks out of the State in aiding Mr. Shurtleff in his mischievous anti-tuberculin campaign." The next day the Secretary sent a communication to the *Tribune* in which no reference is made to the last charge of the editorial. This omission in itself is significant, for the secretary is usually quite sensitive to all charges, and ready in making some sort of defense against them. A few days after the appearance of the editorial we received a letter from a prominent practitioner asking as to the truth of the *Tribune's* charges as follows: "I notice in the Chicago *Tribune*, morning of May 20th, an article on Flexner's report, also Percy's report which makes some rather drastic remarks about the State Board of Health, but what particularly attracted my attention is the closing sentence of the article in which the State Board



is accused of assisting Shurtleff in his anti-tuberculin test campaign. Now it seems to me that if there is unquestionable evidence that the State Board of Health has opposed a measure as useful and well established as the anti-tuberculin test, that evidence should be given to the profession of the State. If the State Board of Health has taken part in such a campaign the profession of the State certainly ought to know it."

On May 26th we addressed a communication to Dr. Gottfried Koehler, Acting Commissioner of Health of Chicago, and received the following reply: "In reply to your communication, I can only say that I have no knowledge that Secretary Egan of the State Board of Health was active in sustaining Mr. Shurtleff in passing the bill prohibiting the City of Chicago from enforcing the tuberculin test. It was a matter of common knowledge that Secretary Egan opposed the pasteurization requirements of our ordinances and I can refer you to the Bulletin of the State Board of Health for his views on that subject. I was always of the opinion that Dr. Egan was in favor of the tuberculin test."

Up to the time of going to press we have no further information upon this matter. Later we may have something further to say regarding the attitude of Secretary Egan on this and other sanitary questions.

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### ARMY MEDICAL CORPS EXAMINATIONS.

The Surgeon General of the Army announces that preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on July 10, 1911, and September 5, 1911, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training, after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General at least three weeks before the date of examination. Early attention is, therefore, enjoined upon all intending applicants. There are at present sixty-one vacancies in the Medical Corps of the Army.

## COUNTY AND DISTRICT SOCIETIES

### ADAMS COUNTY

The regular monthly meeting of the Adams County Medical Society was held April 10, 1911, at the Chamber of Commerce Rooms, with President Knox in the chair. Others present were: Drs. Nickerson, Christie, Ball, Gilliland, Pitman, Nichols, A. D. Bates, Ray Mercer, Austin, Spence, Wells, Bloomer, Pearce, Ericson, Williams, Irwin, Center, Beirne, Bearman, Kirk Shawgo, Montgomery, Whitlock, Haxel.

After routine business some very interesting cases were reported by Drs. Christie and Nickerson. Reassembling in the afternoon, our State president, Dr. A. C. Cotton, of Chicago, addressed us on "Acute Anterior Poliomyelitis." It was a very complete paper covering the entire subject, special attention being devoted to pathology and nomenclature of the disease. The members tendered Dr. Cotton a rising vote of thanks, and also elected him an honorary member of the Adams County Medical Society. Adjourned.

The Adams County Medical Society meeting was held on May 8th at the Chamber of Commerce Rooms at Quincy, Ill., President Knox in Chair.

Present: Drs. Nickerson, Gilliland, Ball, Rice, Williams, Ray, Mercer, Wells, Christie, Koch, Ericson, Kirk Shawgo, C. R. Bates, Blickhan, Whitlock, Schullian, E. Zimmerman, Austin, Ruth, Mitchell, Knapp and Kidd.

The first matter for consideration was the election of an alternate to the state meeting. On motion the unanimous ballot of the society was cast for Dr. R. J. Christie.

After luncheon at the Newcomb, the scientific program was taken up. The first paper on "Erysipelas" was read by Dr. W. E. Gilliland. It was very interesting inasmuch as the Doctor gave us an original method of treatment which has been used with great success by many physicians.

Dr. W. W. Williams discussed "Fibro-myomas of the Uterus." A number of fine specimens of tumors were exhibited by him, and examined by the society members. Discussions were opened by Dr. Nickerson, followed by Drs. Ericson, Christie and Kidd.

Adjourned.

ELIZABETH B. BALL, Secretary.

### ALEXANDER COUNTY

The Alexander County Medical Society held its regular monthly meeting May 18, 1911. The attendance of the members was large and all took a lively interest in the discussions. Instructive clinical cases were presented by several members. The paper of the evening was read by Dr. Kaplan, of the local Marine Hospital, on "Uncinariasis." This paper was very complete, and the discussions which followed valuable. It culminated in the consideration of the physician's attitude towards the sanitary conditions of the town in which he lives. The conclusion seemed to be unanimous that if physicians did not take an active interest in these things, they were derelict in their duty.

A committee was appointed to report at next meeting the things, if any, in the local condition that should be corrected, and a method of procedure that was most likely to bring favorable results.

JAS. W. DUNN, M.D., Secretary.

### BOONE COUNTY

The Boone County Medical Society held its annual meeting April 13, 1911, at Belvidere, Ill., with the following officers present: A. W. Swift, president; Willis Butterfield, vice-president; H. E. Delavergne, secretary and treasurer.

Minutes of last regular meeting read and approved. Jennie M. Covert was elected to membership. Our by-laws were amended making January our annual meeting in lieu of April. Also amended making the meetings every other month excepting July. Election of officers resulted as follows: President, Willis Butterfield; vice-president, R. B. Andrews; secretary-treasurer, H. E. Delavergne; censor, R. H. Herbert; delegate, Willis Butterfield; alternate, H. E. Delavergne.

The president appointed the following committees: medico-legal, Dr. A. J. Markley; legislative, F. S. Whitman; program, Drs. Mitchell, Anna Alguire and Herbert. On account of it being an annual meeting there were no papers.

### BUREAU COUNTY

The thirty-fifth semi-annual meeting of the Bureau County Medical Society was held at the City Hall, Princeton, Thursday, May 11, with Dr. W. C. Griswold in the chair. The following members were present: Dr. M. H. Blackburn, Dr. M. J. Coveny, Dr. J. H. Franklin, Dr. O. J. Flint, Dr. W. C. Griswold, Dr. W. E. Howard, Dr. F. Lewis, Dr. G. G. Kilgour, Dr. W. L. Lineberry, Dr. J. H. McLain, Dr. C. C. Scott, Dr. J. F. Taylor, Dr. J. C. White, Dr. L. H. Wiman, Dr. J. M. O'Malley.

Visitors: Drs. Maurice Wolff and Norman Dixon Curry, Chicago; Oliver and F. W. Gillespie, Peoria; H. N. Heflin, J. H. Oliver, G. H. Hoffman, Armstrong, G. P. Noren, H. B. Melaik, W. H. Cole, H. J. Stewart, P. J. McDermott, Heaps and Fisher, Kewanee; H. R. Carson, Princeton; R. E. Miltenberger, Seatonville.

Announcement of the state meeting to be held at Aurora was read. The minutes of the preceding meeting were read and approved. The treasurer's and secretary's report was as follows:

Balance on hand at time of last meeting.....	\$28.58	
Total receipts for this year .....	66.00	
Total expenditure .....		\$14.69
Balance on hand .....		79.89
	<hr/>	<hr/>
	\$94.58	\$94.58

It was decided by vote that the society should elect a delegate and the presiding officer appoint an alternate. Dr. J. H. Franklin, of Spring Valley, was elected delegate and the chair appointed Dr. C. C. Scott, of Princeton, as alternate. Dr. Griswold read the resolution, asking the legislature to give to the trustees of the University of Illinois \$100,000 a year for the equipment and maintenance of its medical school. This resolution was adopted unanimously by the society. Application was made by Dr. H. R. Carson and he was unanimously elected a member of our society. The president appointed the following to the legislative committee: Dr. C. C. Scott, Dr. C. C. Barrett and Dr. A. E. Owens. The following papers were read: "The Anesthetist as a Member of the Surgical Team," by F. W. Gillespie, of Peoria. "The Wassermann Reaction for Syphilis," by Dr. Norman Dixon Curry, of Chicago. "The Ehrlich-Hata 606 From Personal Observation," by Dr. Maurice Wolff, of Chicago. "Chronic Indigestion as a Symptom," by Dr. G. H. Hoffman, of Kewanee. The papers were very interesting and brought out much general discussion.

Adjourned.

O. J. FLINT, Secretary.

## COOK COUNTY

## CHICAGO MEDICAL SOCIETY

*Regular Meeting, March 22, 1911*

A regular meeting of the Chicago Medical Society was held March 22, 1911, with the president, Dr. Alex. H. Ferguson, in the chair. Dr. Chas. M. Jacobs read a paper on "Congenital Torticollis—Presentation of Cases." Drs. Axel Werelius and C. G. Rydin presented "Goiter Among the Insane." Dr. Maximilian Herzog moved that his paper on "Bubonic Plague" be postponed to a subsequent meeting. Carried.

## DISCUSSION ON THE PAPER OF DRs. WERELIUS AND RYDIN

Dr. Frank P. Norbury: I wish to thank the Society for the privilege of discussing this paper. I am much interested in the work done by Drs. Werelius and Rydin, and their findings are in keeping with my own observations extending over many years, involving not only cases in institutions, but outside cases seen in consultation and in office practice, all going to emphasize what Stanley Hall has said:

We shall never understand many of the deepest problems involving the relation of the mind to the body until we can write a new chapter of psycho-physiology on glandular psychology, secretions and excretions both internal and external, including the functions of what we may still call the sexual glands, although unlike others, they secrete only living cells, condition many psychic states in a way hardly less basic than they do all other physiologic processes and for fundamental feelings and instincts they are probably quite as important as the brain itself.

The work before us is in the study of physiologic principles; the cardinal principle of psycho-physiology of glandular structure, which had its inception with the epoch making work in applied physiology, organo-therapy in the treatment of disorders of the thyroid gland. While it is true this step was but the renaissance of ancient medicine of Celsus, Galen, yet it is new in that the dependence rather than independence of functions of different organs was demonstrated in the success following the therapeutic use of thyroid extract. Indiscriminate use of gland extracts in every sort of disease, without consideration of the underlying principles, only brings discredit on a valuable method of treatment. There is no scientific sanction for the use of brain extract in insanity.

The study of the physiology of the nervous system has opened up this new field of inquiry, stimulated too by the success following the use of thyroid extract.

The results show how physiologic principles must be understood before we undertake therapeutic problems. The stimuli to which most primitive forms of life respond, are chemical: the nervous system enables very rapid reactions to occur, but where less sudden responses are needed, the primitive method is inadequate. The internal secretions are examples of hormones which stimulate the nervous system, from which stimulation a series of events follows, which carried in excess and in sequence lead to serious disorders wherein the nervous system suffers. Example: thyroid with its hormone, iodothyronin, in its reaction leads to exophthalmic goiter: the suprarenals, hormone adrenalin affecting the sympathetic nervous system.

The absence, too, of internal secretion, hypothyroidism, has its effect upon the central nervous system, the skin and subcutaneous tissue. The effects upon the vagus by reason of the absence or reduction of thyroid extract will, as Kraus has shown, affect the heart and as Eiselberg has shown, is a factor in production of arteriosclerosis. Murray and others have shown the effects in myxedema, cretinism, etc. We are more concerned in hyperthyroidism and metabolic disorders which directly or indirectly affect the mind. In an experience of twenty-three years in nervous and mental diseases, during which time I have seen at least 15,000 mental cases, I can say I have only seen a few cases of true cretinism

1. For text of paper see page 727.



and two true cases of myxedema. My experience shows that these cases are comparatively rare in Illinois. Each of these types represents a problem in organo-therapy and psycho-physiology which is very interesting. Especially is this true of cretinism. One case which I have reported, developed very nicely and became an average child, both in his physical condition and mental capacity. I have too in mind a case of myxedema in which improvement was noted as long as the patient continued the use of the thyroid extract. I think I can say truthfully, that I have seen the giving of thyroid extract in involutionary cases turn the case toward recovery by the increment which it gave to help over that period where it is doubtful which way the case will turn. That I am sure is true where we have profound somatic changes of which skin lesions are prominent, such as psoriasis; improvement follows the use of thyroid extract.

We have not yet solved the problems of the diseases of the thyroid where mind is concerned; nor have we of the nervous system, despite the work of Kocher, Crile, Murray, Oswald and others.

The physiologic effects of thyroid secretion, according to Hirschfelder, are:

1. Increase in metabolism, especially in oxidation processes.
2. Stimulation of peripheral nerves.
3. (a) Stimulate depressor nerves from the heart giving rise to cardiac sensations. (b) Stimulate vagi and accelerator nerves, causing tachycardia and stimulation of cervical sympathetic, causing exophthalmos. (c) Cleghorn has shown direct action on cardiac muscle causing increased pulse pressure and cardiac hypertrophy, etc.

My work has given me an opportunity to see quite a number of the so-called "fulminating" type of Graves' disease, a type not mentioned in the paper, which are acute in onset (fulminating) and serious in their course. My patients have been young women between the ages of 18 and 25, with a neuropathic, hysterical background. These patients have, following a fright usually (fear, by-the-way, is one psychic symptom which is always present) suddenly developed the symptoms. I will cite instances: A lady and her escort returned rather late at night from a steam-boat excursion, and in seeking to find the shortest way home, crossed down a dark and rather unused path, and were held up. The footpad took her escort's pocket book, watch, a ring, etc. The young lady was severely frightened and within twelve hours developed a case of acute hyperthyroidism, Graves' disease. I saw her within twenty-four hours and found her in acute delirium. She recovered from this attack which lasted a week or more. Her general condition then improved with the exception of the edema which lasted for quite a while. She finally recovered entirely, however, and is now married and has two children.

Another case which proved fatal, was a young lady, a teacher in the St. Louis public schools. The first evidences of goiter appeared in May. She was run down generally, and her physician advised her to get away from the city. This she did, coming to a city in central Illinois early in June. On the night of the third of July (it was soon after the Spanish-American war) the boys of the town thought to celebrate by shooting off a cannon, a trophy of the war, which had been placed in the city park. The noise from the explosion was very great, and the shock to this young woman was intense. I was called to see her about 10 o'clock in the morning of July 4. She had been free from alarming symptoms up to this date, but the explosion together with the din of the Fourth, generated the fear which I mentioned as a feature of fulminating cases. Acute delirium followed, with intense psycho-motor activity, high temperature and the usual collapse symptoms. The patient died that afternoon. I have seen seven such cases running a course of a few hours to two or three weeks before death. Unfortunately my notes of these cases are packed away in my case records, and I cannot report further. The type is that spoken of by Crile; of acute hyperthyroidism, associated with psychic shock. I have seen one man thus affected. He suffered from atmospheric thermal conditions, heat and cold, so intensely that his family had with considerable skill improvised a place in the cellar where during intense heat of summer he was more comfortable than anywhere else. He was taken to Battle Creek, where he died suddenly in a bath.

I have also given considerable attention to the bio-chemical effects, one of which to me most striking, is the bronzing. Cyron has shown that injection of thyroid extract, thyroid in blood current, causes increased blood flow through the thyroid gland. In this way thyroïdin, acting as hormone, increases its own secretion and establishes the circle.

I had two cases, a mother and daughter, both of whom showed very marked bronzing and represented hyperthyroidism as found in the adolescent and pre-senile stages. Both presented striking nervous symptoms and came under observation within two weeks of each other. The daughter was 17 and the mother 45. Both had marked bronzing which was very interesting, following the cosmetic lines of the face and upon the posterior surface of both arms. Both patients had about the same markings, somewhat similar to the markings of pellagra. The daughter had some marks upon the chest. The mother had striking mental symptoms. She was not confined to any hospital, but she had intense melancholia, was suspicious of everyone, particularly suspecting her husband of infidelity. The daughter thought the people of the neighborhood were talking about her.

My experience confirms that of Hirschfelder, who reports that cardiac symptoms prevail and that psychic symptoms are next in importance.

In a case seen recently, the patient remained for three weeks in a semi-comatose condition; the thyroid enlarged, tachycardia, and psycho-motor restlessness were the distinguishing features.

Another case seen for the first time last Fall, that of a school teacher who from stress of work became weak with loss of weight, insomnia and restlessness, later developed a goiter, tachycardia and tremor, and she had an intense fear of losing her position; also thought that people were talking about her. With quiet and rest she improved, and a report from her two weeks ago says the thyroid enlargement has disappeared.

We must bear in mind the fact that we have no thyroïgenous insanity except myxedema and the mental defect of cretinism, which is truly idiocy. This group alone we can justly say has its etiology in disease of the thyroid. The report shows that but two cases of Graves' disease were discovered in the 4,000 cases of insanity, yet they found a large number of cases of enlarged thyroid or goiter. The cases of mental disorder associated with Graves' disease are allied to infective exhaustive group, marked by intense psycho-motor restlessness, insomnia, clouding of consciousness, disorientation in all three spheres—time, place and person. With improvement, delusions of persecutory character, suspicion, melancholy, depression, fears, etc. Hirschfelder says there is an analogy between over-indulgence in coffee and hyperthyroidism, viz.: activity of thought, restlessness, irritability, etc., being marked.

Stoddardt emphasizes the keynote of mental symptoms in Graves' disease as being found in the psychic expression of "fear." This is noticed during early symptoms, the constant state of dread. This is also noticed in caring for such patients, how every act is connected in anticipation at least, of something going to happen—it is an ego-centric fear—the patient is to be the victim or is the victim. Their untruthfulness, which may or may not appear, is founded on fear of consequences of telling the truth.

This is also reflected in dream disorders—a repetition of fears when awake or of past experiences. A dream is always a fragmentary ensemble of past experiences. Special faculties of mind such as perception are unaffected. Thought and reasoning are normal and memory fair, although the attention is disturbed, emotional tones exaggerated. The patient is usually depressed and melancholy and the reaction is in keeping, leading to delusions of fear, presentations, etc.

Cases found in the pre-senile group may become terminal dement. In rare cases atrophic changes occur in the thyroid and terminal or end results are allied to myxedema; dementia being the feature.

It is not unusual in exophthalmic goiter to have cases show memory impairment, especially of recent events, the events of a day or two previous being for-

gotten. Where mild delirium occurs it is characterized by clouded consciousness, as a result impaired judgment, from which originate very varied delusions. The emotional reactions are also marked. Collapse delirium may be the terminal feature of hospital cases.

I believe success, as you surgeons know, in treatment, lies in being able to combat these cases along the line of early surgical interference, but even then great care is required in combating the paramount psychic element, fear. That is largely a matter of careful handling, anesthetising the patient before she is taken to the operating room, as suggested by Crile. If you remove fear or combat it by intelligent foresight, you have in a large measure done away with one of the great obstacles in surgical interference.

Joseph L. Miller: Little more can be said on this very interesting subject, the author having covered it very fully. One statement to be emphasized is that we know little about the physiology of the thyroid gland.

I only wish to speak upon the relation of iodine to the thyroid gland and the correlation existing between the thyroid and the other ductless glands. Iodine has been looked upon as the specific secretion of this gland. We know that there is a peculiar relation between the iodine and the thyroid. It is known that if a portion of the thyroid is removed the remainder undergoes hyperplasia. If iodine is given this hyperplasia does not take place.

It is found, also, that when animals with hyperplasia of the thyroid, receive iodine the hyperplastic material is in part converted into colloid. It is probably due to the fact that iodine lessens hyperplasia of the gland that it has been employed therapeutically in simple goiter.

It is difficult to make this statement conform to another statement in relation to iodine, that iodine increases the secretions of the thyroid gland. It is known in many cases of hyperthyroidism that iodids when given increase the intoxication. Müller says that in cases where we suspect hyperthyroidism and wish to demonstrate the fact, give iodine and if they have hyperthyroidism they will rapidly develop symptoms of it. It is difficult to explain why on one hand it increases the secretion and on the other lessens the hyperplasia of the thyroid gland.

I have seen two cases which seem of sufficient general interest to report. They were two girls with simple goiter who were both receiving iodids (about ten grains daily) for about six months with little effect on the gland. The iodine was withdrawn and they both developed symptoms of hyperthyroidism. The iodids were begun again and within a few weeks all the symptoms disappeared.

It seems to me we can explain it upon this basis: as a result of taking the iodine for a considerable length of time the glands became inactive. After stopping it they underwent very active hyperplasia resulting in marked hypersecretion of the gland.

Correlation between the thyroid and other glands: we know that, removing it, we get increase in the size of the thymus gland. Those cases which have associated with their thyroid a hypocytois are especially unfavorable cases for operation, perhaps on account of the associated enlargement of the thymus.

Then we might mention the relation between the thyroid and suprarenal gland: we find in most cases of hyperthyroidism some disturbance of the suprarenal gland. We have very delicate tests whereby we can determine the amount of adrenalin in the blood. By taking a strip of rabbit uterus and suspending it in a solution of adrenalin there is excited a rhythmic contraction that may be traced upon a smoked drum. So delicate is the test that this reaction can be obtained from normal, undiluted blood. If we dilute it, it fails to appear. In patients having hyperthyroidism you can dilute the blood as much as eight times and still obtain evidence of the presence of adrenalin. A year or more ago Mr. Brooks, of the University of Pittsburg, carried out the technical part of these tests for me. In most cases of exophthalmic goiter we found a marked increase in the adrenalin. If these patients were operated upon and the operation was successful the adrenalin decreased in amount.



This whole question of the correlation of organs is exceedingly interesting but up to the present time our knowledge is very fragmentary.

V. H. Podstata: I wish to present three brief remarks. First that we have reason to assume that we are dealing with an excessive thyroid secretion in many cases where there is no enlargement of the gland and no exophthalmos. Some general changes, especially in facial expression, accompanied by tachycardia, tremor and increased mental activity, may perhaps be best explained in that way.

The second point: If we analyze the effects of thyroid activity upon the brain, we find that it acts as a stimulant at first. The greater the quantity, the more evident is an irritating effect upon the brain structure. You will find that all the mental faculties are so affected. Perceptions may be too flighty to be properly appreciated and stored. The association of ideas is rapid and may be incoherent. The same is true of motor activity. In the same way the primary sense of stimulation and elation does give way to depression and a rather characteristic fear develops, as has been mentioned by Dr. Norbury.

The third point pertains to the action of the suprarenal glands as compared with the thyroid activity. It certainly appears to exercise a quieting effect on certain conditions of excitement, whether due to thyroid overactivity or to unknown causes. That feature is perhaps worth while investigating.

Fenton B. Turek: I will refer to one important point not brought out, namely, the effect of the thyroid substance on the intestinal flora. I will report a few cases to illustrate the point: a young man had suffered for some time with violent attacks of migraine; sometimes he was even taken home unconscious. The attacks came on periodically and all forms of treatment had had no effect. He had had everything possible done for him, had been fitted with glasses, had traveled and had had sanitarium treatment. When the colon bacilli were isolated it was found that .5 c.c. injected into a rat killed it in a few hours. As you know, this is a very marked degree of virulency, for it is sometimes possible to inject as high as 10 c.c. without effect. I placed him under general treatment with vaccines and although it helped him and his attacks of headache were not so frequent, still there was no marked change. I noticed that his skin was very dry and he complained that his memory was not as good as formerly. I gave thyroid substance, beginning with one grain, increased to two three times a day. Within two weeks the symptoms all disappeared. At the end of two months I again injected the bacillus coli into a rat and it had lost its virulency. That was a year ago and he has had no recurrence.

I had another case which presented this marked symptom of dry skin and headache. This patient also suffered from double vision. I examined the feces and found a very high virulency of the bacillus coli. Began treatment with the thyroid substance and the case showed prompt recovery. Subsequent injection of bacillus coli into a rat showed that the bacilli were no longer virulent.

I have found two cases of myxedema within the past two years. One woman had the myxedema condition in the upper chest and forehead, slow pulse and all the usual symptoms. I thought it would be well to test the bacillus coli and I found a very high degree of virulence in her case.

In taking the cultures for this test, as you know, we do not take them from the feces. The bowel is all thoroughly washed out and then the bacilli from the head of the bowel is used for the test.

In another case the woman had had no thyroid treatment for some time and she complained of headache and general toxic symptoms. I found in her case a very high degree of virulency. I administered the thyroid substance and after thirty days found from another examination that the bacillus coli was not fatal to a rat when injected into the peritoneum.

I found this in a number of cases where there was not even the dryness of the skin as a symptom, but I have administered the thyroid substance and found it had a marked effect upon the virulency of the bacillus coli: so I think it is possible for us to assume that one function of the thyroid substance may be its



effect upon the intestinal flora. The bacillus coli being a habitat in the individual there are constantly antibodies forming and one of the factors controlling the degree of virulence may be this thyroid gland. This is a suggestion for investigation which I should like to see taken up because I have noticed that it changes markedly the neuropathic conditions and combined with other treatment is of material aid in these cases.

Alex Werelius (closing discussion): The action of the vaso-motor system has been worked out and the thyroid seems to have no action upon it.

*Regular Meeting, March 29, 1911*

In the absence of the president, the meeting was called to order by Dr. C. W. Leigh. Dr. Frederick A. Jefferson read a paper on "Spontaneous Recovery of Certain Forms of Cancer." Dr. J. C. Warbrick read a paper on "The Blood Findings in the Last Stage of Chronic Pulmonary Tuberculosis."

DISCUSSION ON THE PAPER OF DR. JEFFERSON

A. Gehrmann: This paper has two distinct features, first the cases he reports; second, the general proposition as to spontaneous recovery from cancer if it is actually established.

As regards the case: the specimens that were presented contained carcinoma without any question, and in addition there appeared what, to one not knowing about the patient, would be diagnosed as a decidua tumor. The character of the mass and the general appearance of it favored such a diagnosis. In this case, however, the age of the patient was against that diagnosis. But, it might be possible, that the presence of the mass originated as fibroma stimulating the endometrium to such an extent that we got the appearance of actual deciduoma. An examination of the uterus would have settled some of these points.

So far as history goes it is to be said in these tumors that extension to the vagina is a marked clinical feature and in this I believe there was none but the metastasis that did appear in distant parts of the body.

As to the spontaneous cure of cancer, that is a thing to question and wonder about. One thing is the diagnosis, if it is clear and positive, then the condition afterward may settle whether it is really a recovery or not. Usually there is a question whether there was a mistake in the diagnosis or not, and we usually say, at first "time will tell whether it was really malignant or not," because the foremost idea is that recovery does not take place unless the growth is removed.

Frederick A. Jefferson (closing the discussion): I have nothing further to say except in emphasis of the fact that the cases reported as spontaneously cured were all verified histologically. The 14 cases by Gaylord were subjected to histologic examination. In looking over the literature of this subject there were hundreds of cases reported as having been spontaneously cured, but these that I have given were selected because of their authenticity.

*Regular Meeting, April 5, 1911*

The president, Dr. Alex. H. Ferguson, introduced in a complimentary manner Dr. Joseph Price of Philadelphia, who presented by request a paper on "Perineal Plastic Operations." Dr. F. Gregory Connell of Oshkosh, Wisconsin, read by invitation a paper on "Early Diagnosis of Cancer."

DISCUSSION ON THE PAPER OF DR. CONNELL

Dr. A. J. Ochsner: Dr. Connell always gives us material for thought, and for years, from the time that he started in this work, my attention has been upon the philosophy that he is developing, or has always brought out, in his papers. In this particular subject you see the result of his studies has been negative but he very carefully does not leave the impression that this means that his observations are conclusive. Quite the contrary.

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1. For text of paper see page 689.

There is no doubt but what the early diagnosis of cancer must result from some studies similar to those that Dr. Connell has been making. There are certain main elements that would serve as a basis for such studies which we do not possess at present.

Personally I am absolutely convinced of the fact that carcinoma is the result of a pathogenic microorganism. I am not in a position to insist upon its demonstration, although in my own mind I am convinced of its existence and I believe that as soon as it is possible to place this specific microorganism as a basis for experiments like those that Dr. Connell has described those who are making these experiments will be able to determine the early diagnosis as the result of these experiments based upon that particular foundation. Without it, it is very clear that it will be entirely accidental if a method is found.

We are simply working with tissue which contains any number of elements and if enough of this specific element is contained then the prospect of satisfactory results is considerable. If the amount of the specific element is so slight as not to be effective in the course of the experiments then, of course, the possibility of results is slight.

Now then, as regards the clinical standpoint at the present time: it must be this, that as a result of accumulated experience, if we have a certain condition which if permitted to progress in the tissue of the human being develops into cancer, then at the earliest possible moment at which our experience tells us that there is a strong probability of the development of cancer, I believe we should remove the growth—in other words, we should not be content to wait until the cancer has made sufficient progress to be absolutely demonstrable to take radical steps.

For instance, in the operation for ulcer of the stomach, if there is suspicion of cancer having been implanted in the ulcer, operate. In a case of uterine hemorrhage after the menopause the suspicion enforces the operation. In development of nodules in the breast at or shortly after the menopause I believe it is right in all cases to give the patient the benefit of the doubt. In more than nine-tenths of all of the cases of inoperable cancer which have come under my care the practitioners have not been willing to take the responsibility of having an operation at the early stage when the patient first came under their observation and, moreover, have not been willing to place the responsibility on a surgeon who would have been willing to take it.

M. Herzog: Dr. Connell has very ably discussed the subject in a long and exhaustive paper, but what he has said has shown us that we have, from the standpoint of serum diagnosis, absolutely no means for making an early diagnosis of cancer. All the tests which have come out recently and which I have watched carefully, have failed, not a single observation having been confirmed. Valuable as the work of the Doctor has been, he must confess that he cannot offer us any such serum tests as we have, for instance, in syphilis, typhoid, glanders, etc.

Dr. Ochsner has stated that in his belief carcinoma is due to a microorganism. I confess myself of the same opinion but this is merely a hypothesis and more than that, it is not even a working hypothesis because no one has been able to produce cancer or malignant tumors in general except by transplanting cells. I was successful a few years ago in transplanting a rat sarcoma by such cell transplantations. I attempted to propagate the tumor from animal to animal without transplanting cells and in no one single instance did I succeed in these experiments with filtrates, etc. So we must confess that we know nothing of the organism because the only successful work that has been done has been accomplished through transplanting cells.

We therefore as far as early and absolute diagnosis of cancer is concerned still depend upon microscopic diagnosis and all the surgeon can do is to furnish the material early if cancer is suspected. We have no absolute methods of the early diagnosis of cancer except the histologic examination.

Joseph Price (Philadelphia): A discussion on malignancy is always interesting to one interested in surgery. We all know that cancer is an exceedingly common disease and about daily presents for our consideration. In gynecologic work

it is constantly before us. The Germans, I think, adopted some years ago the rule of removing any and all wornout organs after they had become useless. if they presented the slightest suspicion of malignancy. And the Germans, as you know, are a scientific people, far in advance of our work in their laboratory research and always making the earnest scientific effort to determine the precise nature of disease. In the uterus, when they find subinvolution and erosion, followed by bilateral laceration, they remove it and they report large numbers of permanent cures, long intervals without recurrence. I am satisfied that all of these cases were errors of diagnosis. Malignancy is malignancy the world over and if it does not return it is simply an error of diagnosis.

I sometimes feel that there are removals for cure. For instance, I have a patient in whom a quarter of a century ago I removed both breasts. She is now quite a society woman. A good many of the patients operated by Adenue lived and I am satisfied that they are cured. I am convinced that early surgical intervention results in cure but I am equally satisfied that all disease is due to germs. The State of New York has, I think, made an appropriation to determining something about disease, but so far, with so good a man as Dr. Park at the head of the body they have determined nothing except that fish are getting it!

You may go where you will to witness surgery and you will find a growing interest and enthusiasm in good surgery. You will find we are doing better surgery, going deeper into the zones of invasion and extension and if we have had good results in the past we can look forward with a great deal of pleasure to the prospect of better results.

Statistics give the average life of a Harvard graduate as 46 years. Osler says "chloroform at 60." Roosevelt calls it "the strenuous life" but we continue to do good surgery to add to the pleasures of life and to prolong life. When you have had a vacation, you come back with increased vigor, rosy cheeks and additional flesh and go to work with renewed strength. Surgical intervention in loathsome disease is just this to the individual. You go into a home where there is a loathsome disease and there is an offensive odor, pain and suffering. Sister, brother, husband and wife appeal to us for relief. Remove the malignancy and you restore the home; you are to that patient just what the vacation has been to a healthy person. You give that person 12, 16, 22 months and sometimes three years of healthy, useful happy life. That is the tangible result of good surgery.

The class of "incurables" is much spoken about. Nearly all of us have used the curet freely and we have used the cautery freely, beyond what appeared to be the possible zone of invasion and we continued to burn until we got tired and ashamed of cooking and we had these zones contracted to small scars and the so-called incurable cases lived a year or more without hemorrhage and the only disadvantage in the recurrence in the bowel or bladder—two organs that give us so much pain and distress—was that it were better to have died in the first place than to die of the recurrence.

I remove a breast upon the slightest suspicion if it has become a useless organ and I would urge every surgeon in case of doubt to sacrifice an organ to be on the safe side.

#### *Regular Meeting, April 12, 1911*

The president, Dr. Alexander H. Ferguson, called the meeting to order. Dr. Wm. H. Wilder read a paper on "Metastatic Ophthalmia." Dr. Maximilian Herzog read a paper on "Bubonic Plague." Dr. Milton Mack's paper on "Intestinal Tuberculosis," was postponed owing to the lateness of the hour.

#### DISCUSSION ON THE PAPER OF DR. HERZOG

Dr. Kent: I have had a small experience with bubo during the Spanish-American war during the campaign of the army in Porto Rico in 1898-1899. It could not have been due to rats, however, as there are no rats or small animals of any sort on the island. We had plenty of fleas and mosquitoes and insects of all sorts, but no rats or mice or snakes.

During the latter part of 1898 I was in the field with the army and we had a few cases of non-venereal bubo. Afterward I was on duty at the hospital and



there I found 30 or 40 cases, all claimed to be non-venereal. They always claimed it was non-venereal, but sometimes we were a little suspicious. I was very successful in getting it cleaned up. It was well cleared up at Ponce but at the west end of the island they claimed to have a great deal of trouble with bubo and venereal disease and I was stationed there for three months.

When I arrived there were 42 cases of bubo in the hospital, 28 of which had had the inguinal gland removed with the knife one or two days before I got there. One man, operated on twenty days before I arrived, was in a very low condition, and the groin was in bad shape. With Bovinine and an antiseptic wash I succeeded in saving his life. He was still in the hospital when I left three months later, but he was able to get around some, although his hip was in bad shape. The other 28 cases that had been operated on were not so serious as this and all recovered, but there was no more operating after I came, nor did I at any time use a knife in these conditions.

The treatment I used uniformly was hypodermic injections of carbolic acid, 95 per cent., one minim into the center of the bubo. If one injection did not destroy the virus two or three were given, but usually one was sufficient. With this method I usually had them on duty again in three or four days. Total destruction took place with these injections.

I think these cases had all the characteristics given by Dr. Herzog, nostalgia, symptoms of drunkenness and wild talk. Some were exceedingly silly in their delirium. I do not think they were anything else but this same plague which has been so serious in the far east.

We may have had some infection from rats brought to the island by the ships, but there were no rats on the island. I do not think there are any especial points of interest that I can bring out, as I only saw about 120 or 125 cases and did not keep exact records, but my treatment was uniformly successful.

Dr. Hemenway: I was very much interested in all Dr. Herzog had to say. I have been impressed with the fact that in Manchuria fleas evidently have little to do with the spread of the disease. I wish the Doctor had said more as to what he thought of the ways in which it had been spread. He spoke of the fact that while dogs had been suspected of spreading the disease, yet the evidence had been negative. The Tokio paper of March 11th contained a telegram to the effect that in the eastern part of Manchuria a family of seven were found all dead, and in the bed beside the bodies was found the body of a small house dog. Dr. Takami made the post-mortem examination of the dog and was convinced that the death of the dog was due to the plague. Dr. Takami is assistant to Dr. Kitasato as director of the Imperial Pathological Institute.

Maximilian Herzog (closing the discussion): I have not much to say except that Dr. Kent's cases may have been some kind of bubo, but it is very clear that they were not true bubonic plague. In the tropics we find cases of so-called non-venereal bubos. True bubonic plague has a mortality of from 75 to 80 per cent. and in the pneumonic type of from 90 to 100 and a large number of inguinal bubos with no mortality at all are certainly not cases of bubonic plague.

Dr. Strauch's cases were very interesting and since you may not have got the gist of his remarks I will re-emphasize this point: when the boat left the port of Alexandria there was no plague on board, but there were rats. They must have been infected when they came on board. During the trip numbers of rats died and from them the infection spread to man. This occurrence has been noticed before, plague comes on board with the rats and from them spreads to man.

#### CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

*Regular Meeting, March 21, 1911*

A regular meeting was held, March 21, 1911, with the president, C. M. Robertson, in the chair.



## TUMOR OF THE HYPOPHYSIS CEREBRI

Dr. D'Orsay Hecht discussed at length the symptomatology from the neurologist's standpoint of tumors of the hypophysis.

Dr. Norval H. Pierce demonstrated on an anatomical preparation the intranasal route for the operation for the removal of tumors of the hypophysis.

## DISCUSSION

Dr. Joseph Beck stated that the point made by Dr. Hecht in reference to the diagnosis of tumors of the hypophysis by the aid of the radiogram interested him particularly, and the radiogram that he presented here this evening of his case shows with what certainty, in addition to the other symptoms, one can make a correct diagnosis.

As to further discussion of the subject he believes he is not qualified because he never had a case of this kind that he knows of. At the same time he wishes to be permitted to mention briefly a case that proved to be one of tumor of the hypophysis post-mortem, in which he made the diagnosis of cerebellar tumor and operated for same. This he did after a very careful examination, with the aid of a neurologist in consultation. In this case they had the bitemporal hemianopsia, a symptom that is looked upon almost as pathognomonic of tumor of the hypophysis. It was, however, not absolute on the one side, and since the other symptoms of imbalance, localized pain in the left occiput, were so prominent and the x-ray picture absolutely negative as to the enlarged sella turcica, also absence of other symptoms mentioned by Dr. Hecht which are present in hypophyseal tumor, they decided in favor of a tumor in the left cerebellar region. One symptom very prominent in this case which gave additional strength to the diagnosis of cerebellar disease, not mentioned by Dr. Hecht, was horizontal, vertical and circular nystagmus. In the absence of any ear symptoms or non-congenital ocular disease, they decided that that was the result of cerebellar irritation. The fundi were negative in ophthalmoscopic examination, but the vision was markedly reduced. The pulse rate was not affected. The operation disclosed no tumor. Dr. Beck explored the left as well as the right cerebellar region. Patient lived ten days. Postmortem showed a small tumor of the hypophysis which was situated more on the left side of the sella than the right, and histologically appeared like the hypertrophy of the normal gland. Dr. Beck is particularly interested in the nystagmus in this case.

Dr. J. R. Fletcher stated that he had the pleasure of being present at the first operation done by Dr. Kanavel through the intranasal route. A semicircular incision was made between the nose and the upper lip. The quadrilateral cartilage was then cut through diagonally upward, allowing the point of the nose to be easily lifted out of the way. The bony septum was cut away and the middle turbinal of one or both sides removed, he cannot say which. The anterior wall of the sphenoid cavity was well exposed. This was removed with what appeared to be some little difficulty, with the usual nasal bone-cutting forceps (Grünwald's conchotome, he thinks). A gouge, much like the Alexander mastoid instrument, was employed to enter the floor of the sella turcica. This opening was enlarged and the tumor exposed to view and removed through it. Dr. Fletcher was much impressed with this as a good route and with the small amount of deformity. At the request of Dr. Marvel he did this operation on the cadaver the next day with some slight modification, as follows: It seemed to him unnecessary to destroy the bony septum. After the above incisions beneath the nose and through the cartilage, the perpendicular plate of the ethmoid and the vomer were cut or sawed through horizontally and the upper portion broken over to the left of the subject; the right middle turbinal was completely removed and the anterior wall of the sphenoid sinus well exposed. The ostium was entered with Hajek's knife and enough of the wall broken down to allow the introduction of the head of his sphenoid punch. First the right and then the left half were very easily removed with this instrument. This instrument works so well that the use of any other seems slow and difficult to Dr. Fletcher. The sphenoid septum was broken away

with simple straight forceps, exposing the upper wall of the sphenoid cavity or floor of the sella turcica. The first opening was made through this with a small Alexander gouge and enlarged with the punch, which, because of its hemispherical head, could do no possible harm. The hypophysis was then removed with cutting forceps.

In order to observe just what had been done within the cranial cavity, the skull was opened by large bone flaps in the temporal region. After lifting the brain it was plainly seen that the work was correct. Dr. Marvel demonstrated this head before the Chicago Medical Society.

A strong impression was made upon Dr. Fletcher of ample room and good view. Dr. Fletcher has twice seen von Eiselsberg operate, turning the entire nose to one side, but prefers the intranasal route.

Dr. Harry Kahn states that in the discussion of the operative phase of this question the work of Hirsh seems to have been overlooked. Therefore he takes the liberty of bringing his methods and results to the notice of the Society.

In *The Journal A. M. A.*, Aug. 27, 1910, page 772, he presents two methods of operative procedure: first, following the Hajek suggestion for the sphenoid operation, he removed the middle turbinate bone, opened the posterior ethmoid cells, then attacked the anterior wall of the sphenoid sinus, and finally uncovered a protruding tumor, which proved to be a cyst of the pituitary body, that presented into the cavity of the sphenoidal sinus. This operation was done under cocain adrenalin anesthesia in several sittings.

The second method of operation is also mentioned but is described more in detail in the *Archiv für Laryngologie und Rhinologie*, Vol. 23, No. 3, and Vol. 24, No. 1. Hirsh here describes a method by which he operated on three cases of pituitary tumor successfully. The following is the technic:

The method contemplates the opening of the sphenoid sinus through a pocket made by dissecting the mucous membrane of the septum. An incision into the septal mucous membrane is made as for the Killian method for the correction of septal deviations and the muco-perichondrium is dissected on both sides. The cartilage is removed as in the septum operation. The bony septum is now attacked and the mucous membrane and periosteum is dissected back until the instrument enters the openings of the sphenoid sinus. With a bone cutting forceps the vomer and perpendicular plate of the ethmoid are cut away back to their attachment to the rostrum of the sphenoid bone. The rostrum of sphenoid is now removed by means of chisel and bone-cutting forceps. The septum between the two sphenoid sinuses is removed. The whole of the sphenoid cavity can now be viewed. The bone which separates the tumor mass from the cavity may, by a tap of the mallet on the chisel, be broken away. The brain membranes are cut. The tumor then presents and as much or little as desired may be removed.

If the middle turbinate impinges on the septum, or is so large as to prevent the sufficient separation of the flap of the septal mucous membrane, they are resected.

This operation is done under cocain and adrenalin anesthesia but reinforced by injection No. II Schleich's solution, under the septal mucous membrane.

The method seems to Dr. Kahn the best so far advanced. The results are certainly as good as can be expected from any procedure. It requires skill and care, and places the operation for pituitary tumor in the rhinological rather than the general field.

Dr. George E. Shambaugh: The exposure of the hypophysis by the intranasal route appears to be so much better than any other method. It does not speak very well for the enterprise of rhinologists that this fact had to be pointed out to them by the general surgeon. The sphenoidal sinus was the last of the nasal accessory sinuses to be discovered surgically by the rhinologists, although it is perhaps the most readily accessible of any of the nasal accessory sinuses. In text books that are hardly yet out of date the sphenoidal sinus was referred to as a cavity so remote as to be out of our reach. It was the more accurate study of the anatomy of the nasal cavities, especially by Zuckerkandl, that showed the

accessibility of the sphenoidal sinuses to surgical interference. The operation on the sphenoidal sinuses, whether for the drainage of this cavity or for the exposure of the hypophysis, is very clearly one for the rhinologist to undertake. The technic of working through the narrow nasal chambers is one not readily acquired and the general surgeon is working under a great handicap when he attempts this kind of work. It is very natural that the general surgeon should look about for some other route, as for example, that suggested by Dr. Wagner this evening, of going through the mouth. This, by the way, was the method suggested for reaching the sphenoidal sinuses prior to the discovery by the rhinologists of the intranasal route. That this entire operation upon the hypophysis can be accomplished under a local anesthetic has been demonstrated. Whether it will be necessary to remove the posterior upper part of the septum depends largely upon the variations in the nasal chambers themselves. It ought to take but a few minutes to accomplish this part of the operation together with the removal of the middle turbinates, and perhaps opening the posterior ethmoid cells sufficiently to expose the entire anterior wall of the sphenoidal sinuses. After this condition has healed, the second operation—the opening of the sphenoidal sinuses and the exposure of the hypophysis—can be undertaken.

Dr. Edwin Pynchon: As in this operation it is desirable to have as much space as possible for work in the neighborhood of the sphenoid bone it would seem advantageous to employ Dr. Ballenger's method of exenteration of the posterior ethmoid cells in combination with removal of the anterior two-thirds of the middle turbinal. In this way more easy access would be gained for the taking of the later operative steps required.

Dr. C. H. Robertson states that one can gain much more room in attempting the opening of the sphenoidal sinus by going through the antrum, ethmoid and sphenoid cells.

His method is accomplished by making a Caldwell-Luc operation, going through the antrum, backward and upward through the ethmoid cells till he enters the sphenoid sinus. The partition wall or nasal wall between this cavity and the post-nasal space is broken down into one cavity. The septum is removed in about the same manner as described by Dr. Pierce. More room is thus obtained than can be had by the procedure as he described. In this manner we get as much more room as is represented by the transverse diameter of the post-ethmoid cells, which is never less than  $\frac{1}{2}$  cm., and may be as much as 1 cm. on each side. In this manner you will find it possible to open the sinus and remove the posterior wall by operating only on one side, thus saving the turbinate on the other side entire or in part. This operation is done by others and in some cases is a very excellent one, as it is purposed to destroy as little tissue in the nose as is possible, to the proper performance of the operation under consideration.

#### CHICAGO OPHTHALMOLOGICAL SOCIETY

*Meeting of Feb. 16, 1911*

The President, Dr. H. W. Woodruff, in the Chair.

#### FURTHER REPORT OF AN ORBITAL TUMOR OF TEN YEARS' STANDING; ENDOTHELIOMA

Dr. C. A. Leenheer presented a woman of 34 whom he had exhibited at a meeting of the society five years ago. The patient had an endothelioma of the orbit which had been growing for about ten years. Examination at the present time, nearly six years after the Kroenlein operation had been performed, shows that the eye protrudes above as much as before the operation. The lids cover the cornea, conjunctiva injected; pupil does not react to light; there is secondary optic atrophy; general health is good. Since the operation, she has had three children. There has been no evidence of metastasis. Pathologic examination by Dr. Zeit showed a *hemangio-endothelioma perivasculare*.

Dr. Richard J. Tynen, in discussing the Kroenlein operation, inquired if Dr. Leenheer had had any difficulty in separating the bone with a chisel.



Dr. Leenheer replied that the operation had been performed by Dr. Schroeder without difficulty.

#### PATIENT WITH UNUSUAL FIELDS OF VISION

Dr. Thomas Faith reported the case of a woman of 23 with irregular constriction of the form fields. The field for red was constricted in the upper portion and those for red and green could be seen only in an area of 20 degrees in the inner, lower and outer fields. There was an absolute central scotoma for green and blue. There were no evidences of fundus lesions, nor were there any manifestations of hysteria or insular sclerosis. Vision equalled 20-50. The fields taken repeatedly showed the same result.

#### UNUSUAL CASE OF BUPHTHALMUS

Dr. Major H. Worthington showed a girl of 18 who entered the service of Dr. Willis O. Nance at the Illinois Eye and Ear Infirmary several weeks ago, with a large buphthalmus of the left eye. The eye is about two and one-half times larger than normal. The thinned sclera presents a decided bluish tint throughout the entire anterior ocular segment. Tension is normal and vision equals shadows. The patient was seen nine years ago by Dr. E. K. Findlay who diagnosed the case as one of tubercular keratitis. An iridectomy had been done in 1905 by Dr. T. A. Woodruff which brought about a reduction in the ocular tension, and improved the then existing vision. The increase in the size of the eye, as noticed by members of the patient's family, has rapidly increased for six years, the right eye has a decided thinning of the anterior structures with bulging and appears to be taking the same course as the left. Vision in this eye is reduced to the perception of shadows. Von Pirquet tubercular test was positive. Therapeutic doses of tuberculin are being administered. Dr. Worthington believed the prognosis to be exceedingly grave.

#### A CASE OF ANTEPARTUM PURULENT OPHTHALMIA

Dr. Willis O. Nance reported the case of an infant who entered his service at the Eye and Ear Infirmary one and one-half days after birth with the following history: Three hours after birth, as seen by Dr. Hugh Blake Williams, the eyelids were swollen and red, the bulbar conjunctiva was deeply injected and a thin pus was exuding from both eyes. This condition was observed by the attending obstetrician at birth. The mother had had a profuse leukorrhea for several months. One week before labor, there had been rupture of the amnion with discharge of waters. The baby weighed four pounds. After admission to the hospital, the ocular symptoms increased in severity and both corneae became involved, one of which perforated with evacuation of the lens. At no time was it possible to demonstrate the gonococcus. The patient was discharged from the hospital three weeks after admission. The cornea of one eye is clear except for a small scar. The other is leukomatous.

The case is the second one of antepartum ophthalmia that Dr. Nance has observed, the other being one that he reported to this society in 1907.

Dr. Thomas Faith was called to see a patient with antepartum conjunctivitis several years ago, in consultation with the attending physician. There was a well-marked purulent conjunctivitis at birth. The bag of waters had ruptured several days (five days?) previous to labor. The gonococcus was demonstrated in the discharge from the baby's eyes. The case ran a favorable course and terminated with a slight opacity of one cornea only.

Dr. H. S. Gradle inquired whether the genitalia of the mother, in Dr. Nance's case, had been examined and whether there had been any specific stains used on the secretion of the child, or if examination for the chlamydozoon of Prowazek had been made.

Dr. Nance, in closing, called attention to the study of the disease by Sydney Stephenson and believed with this observer, that cases of antepartum purulent ophthalmia are not nearly so uncommon as has been generally believed. He also

believed that many of the cases of so-called congenital ocular anomalies, as corneal staphylomata, microphthalmos, corneal opacities, etc., might be accounted for by intrauterine infection. In answer to Dr. Gradle's questions he stated that no examination for the Prowazek microorganism had yet been made.

### SIMPLE HYPERTROPHY OF THE TARSUS

Dr. M. H. Lebensohn presented a woman of 51 with a swelling of the right upper eyelid, noticed for the first time a little more than a year ago. There had been no pain at any time and the conjunctiva was and had been normal. The patient came to the Infirmary clinic because she could not open the eye as well as the other. The family and personal histories were negative. The diagnosis of simple hypertrophy was made, as no inflammatory symptoms had ever been observed.

Dr. E. V. L. Brown inquired if the Wassermann test had been made.

Dr. C. J. Swan called attention to a case he had presented to the Society three months ago which was bilateral, and the tarsi so enlarged that it was impossible to evert the lids. In this case, the specific therapeutic test has been made and also a Von Pirquet test, both of which proved negative. The patient experienced practically no inconvenience from the condition.

Dr. Lebensohn, closing, stated that no Wassermann had been made. The history is positively negative and besides in specific tarsitis there is an inflammation at some time, a condition which has never been present in this case.

### BILATERAL MARGINAL THINNING AND ECTASIA OF CORNEA

Dr. Milton H. Schultz (by invitation) presented a man aged 18 years, who came to the Eye and Ear Infirmary with a perforation of the cornea of the left eye with prolapse of the iris along the upper inner margin. He gave a history of attacks of inflammation of the eyes occurring off and on for two years. The morning of the entry to the hospital, he was awakened by pain in the left eye. Examination revealed a perforation with prolapse of the iris along the upper inner margin of the left cornea. Eserin  $\frac{1}{2}$  per cent. and pressure bandage were ordered. Two days later, the patient complained of a sharp pain in the right eye and examination showed a crescent-shaped peripheral ectasia and thinning of the upper inner quadrant of the cornea which seemed in imminent danger of perforation. It was bordered centrally by a saturated gray line of opacity. The bulged portion was translucent and covered with fine superficial branching vessels and distinctly anesthetic.

The left eye then presented an exact analogous area of peripheral thinning with less bulging. The perforation measures 2x1 mm. at axis 135 degrees and involves the body of the iris from its root to its pupil border. The pupil was pear-shaped. Vision in each eye is practically normal (10/10—3). The ophthalmometer shows an astigmatism of approximately 1 D. Morax-Axenfeld diplobacillus and staphylococcus albus were grown from the conjunctival sacs.

Under pressure bandage and eserine, the marginal ectasia of the right cornea remained unchanged for 10 days, then suddenly and entirely disappeared leaving only a flattened area of very thin cornea. The hernia of the left iris was flattened down to its former height, so that it barely projects over the level of the rest of the thinned area. The tension is a little below normal (9 mm. Schiotz tonometer).

The case is unusual in (1) the early age of the patient (18 years); (2) the entire absence of an arcus senilis, and (3) the disappearance of the ectasia while under observation.

Dr. Oscar Dodd: This case has interested me very much because of the rare condition and the fact that I have had only one other like it in my practice. The right eye has presented some unusual features. By some error, the eserine was not used for two or three days, there occurring then a marked ectasia with a drawing-up of the pupil, making it oblong. I immediately had the eserine and a compress bandage used, and the next time I saw him—two days later—the

pupil was normal in size and the ectasia was much less. The reduction of the ectasia under the use of eserine and bandage has been very marked in both eyes; as the cornea at that point has come back to about the normal curvature.

Dr. E. V. L. Brown said that Seefelder's finding of granulation tissue in the anterior half of the cornea corresponding to the thinned area is of great importance when taken in conjunction with the fact that scar tissue was entirely absent; if an inflammatory process had preceded, scar tissue would have developed. His finding of extensive fatty degeneration of the portion behind as widely into the clear central cornea just as in arcus senilis is strong corroborative evidence that Fuchs' view that the two processes are similar in nature, is correct.

#### CYST OF THE ORBIT WITH SOME INTERESTING FEATURES

Dr. Richard J. Tivnen reported a case of tumor of the orbit. Patient had observed about a year and a half ago a localized swelling to the nasal side in the tissue of the upper eyelid of the right eye. It was the size of a small pea, was never reddened, inflamed, painful nor tender to the touch. It has noticeably increased in size since last August. Since the age of 18, patient has had several growths removed from the scalp at different times which were hard "like a stone."

Examination discloses a soft freely movable mass slightly larger than a pea, located rather deeply in the soft tissues behind the upper lid just beneath the inner supraorbital arch. The mass does not pulsate, is freely movable, is not attached to the globe or lid structures and is not tender on pressure. No exophthalmos or malposition of globe. Palpebral aperture of right eye is noticeably smaller than that of the left, measuring about 6 cm. in the former and eight cm. in the latter. Vision O. U., 20/50ths.

#### INVERSION OF IRIS; PATHOLOGIC SPECIMEN

Dr. H. B. Young, Burlington, Iowa: The eye which I have on exhibition was enucleated about 4 weeks ago because it was totally blind, and in hypertension. It contained a dislocated cataractous lens which floated about like a cork in a bottle of water and had an intractable corneal ulcer. The history was briefly as follows: R. R., aged 56, a forester, while felling trees 17 years ago was struck on the left eye by a rebounding tree-limb. The pupil was "scattered" and never restored. Two years later vision was lost. There was no real trouble until four months ago when this eye became inflamed and painful and the other eye weak. The eye has been better and worse since then, but never well.

Treatment for a week with pilocarpin and antiseptics without lasting result. The interesting feature in the specimen is the probable inversion of the iris. The lens no longer floats because the 4 per cent. formalin in the preservative has reduced the fluidity of the contents. The possibility of the dislocated lens acting as a foreign-body was an additional consideration for enucleation. The right eye is no longer weak and the patient expresses himself as in better condition than any time in the past year.

#### UNILATERAL VERNAL CONJUNCTIVITIS

Dr. C. H. Beard exhibited a woman of 26 with a vernal conjunctivitis of one eye. The disease was of the "mixed" type, being oculopalpebral. Duration of the disease had been two years. The case was unique in that the disease appeared so late in life and was unilateral.

WILLIS O. NANCE, Secretary.

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#### CRAWFORD COUNTY

The regular meeting of the Crawford County Medical Society was held in the Carnegie Library, Robinson, at 2 p. m., May 4, 1911. The minutes of the previous meeting were read and approved. The following members of the society were present: Drs. Cato, Price, T. N. Rafferty, Newlin, Mitchell, Firebaugh, Kasdorf, H. N. Rafferty, Kirk, Dunham, Carlisle, Lowe, Davis, Allen, Ikemire and



Brooks. Dr. H. N. Rafferty read a very interesting paper on "Plastic Surgery," dealing particularly with the beneficial results to be obtained in operations on the scars resulting from burns of the second and third degree. He exhibited a patient upon whom he had successfully operated for such a condition. Upon motion duly seconded and carried the paper was received for discussion which was opened by Dr. Dunham and was participated in by the various members of the society.

Following this a paper, "Earaches, Their Causes and Treatment," was read by Dr. Cato. This is a subject of considerable importance to the general practitioner and was handled in a very able manner. On motion it was received for discussion, which was opened by Dr. Price and further discussed by the entire society.

The next paper was an excellent paper by Dr. Allen entitled, "Diseases of Infants and Children," which subject was handled in a very creditable manner. The discussion of this paper was opened by Dr. Newlin followed by a free discussion by the entire society.

At five o'clock the members of the society entertained their wives with an elegant five-course dinner, after which Dr. Firebaugh read a paper, briefly giving his experiences in the practice of medicine for one day, which was very well received. Adjourned.

A. LYMAN LOWE, Secretary.

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#### CUMBERLAND COUNTY.

The Cumberland County Medical Society held their postponed regular April meeting at the Court House in Toledo, Ill., on May 5, 1911, at 3 p. m. The meeting was called to order by President Dr. Kurtz. The regular secretary, Dr. J. C. Hancock being absent, Dr. W. J. Smith was elected secretary pro tem. It being regular time for election of officers, the following officers were elected for the ensuing year: President, Dr. R. L. Kurtz; vice-president, Dr. B. T. Zobrist; secretary-treasurer, Dr. S. E. Bigler; delegate, 1912, Dr. J. C. Brookhart; alternate, 1912, Dr. R. F. Stephens; medico-legal committee, Dr. W. L. Smith.

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#### DEWITT COUNTY

At the annual meeting of the DeWitt County Medical Association, held at Clinton, April 25, 1911, the following officers were chosen: president, H. J. Littlejohn, Farmer City; vice-president, O. B. Edmonson, Clinton; secretary and treasurer, C. W. Carter, Clinton; censor, G. H. Davis.

The State meeting of the Medical Association will be held at LeRoy, May 17, 18, 19. Dr. O. B. Edmonson of this city was unanimously chosen to represent DeWitt County at the meeting. The following was the program given at the meeting; "Fluid in the Pleural Cavity," Dr. S. A. Graham, Clinton; "Eclampsia," Dr. G. A. Dean, Lane; "Some Surgical Cases," Dr. O. B. Edmonson, Clinton; "Abdominal Tumors in Infants," Dr. H. W. Hooker, DeWitt; "Some Injured Fingers," Dr. C. W. Carter, Clinton.

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#### FULTON COUNTY.

The fifty-sixth meeting of the Fulton County Medical Society met in the Churchill House in Canton, May 2, 1911, and was called to order by the secretary on account of the absence of the president and vice-presidents. Dr. Scholes was elected president pro tem. The minutes of the October and December, 1910, meetings were read and adopted. Dr. Shallenberger moved that Mr. Gorman of the C. B. and Q. R. R. be granted permission to address the meeting concerning the arrangements that road had made to accommodate those who wished to attend the A. M. A. meeting at Los Angeles. Carried. Resolutions asking the state legislature to make appropriation for the maintenance of the Medical Department of the University of Illinois were adopted. Applications for membership

from Drs. Welker, of Marietta, and Peirsol, of Avon, were received and referred to the membership committee. Shallenberger and Reagan moved that the rules be suspended and that the membership committee report on the applications of Drs. Welker and Peirsol and that they be voted on at this meeting, also that as Dr. Rogers was the only member of the membership committee that he select two members from those present to act with him on these applications. Carried. Dr. Rogers selected Drs. Welch and Nelson. The committee subsequently made a favorable report on the applications and Hayes and Rogers moved that the secretary cast the vote of those present in favor of electing Drs. Welker and Peirsol to membership. Carried. Secretary cast twelve votes favorable to their election and the chair announced their election.

Dr. T. W. Gillispie, of Peoria, presented an exceedingly instructive paper on "The Anesthetist as a Member of the Surgical Team," and Dr. E. W. Oliver, of the same city, an equally commendable paper on "Orthopedics of Infantile Paralysis."

Dr. Davis submitted a very interesting paper on "Syphilis" and Dr. Hayes one on "Neurasthenia." Liberal discussion followed each paper.

On motion of Hayes and Rogers the society unanimously voted thanks to Drs. Gillispie and Oliver for their splendid papers.

Those present were Drs. Gillispie and Oliver of Peoria; Peirsol, Welch, Stoops, Snively, Rogers, Nelson, Shallenberger, Adams, Davis, Cluts, Boynton, Jennie Parks, Scholes, Ray, Harrod, Parker, Simmons, Allison, Standard, Maud T. Rogers, Reagan, Oren and Kirby. Total, 26.

Adjourned.

D. S. RAY, Secretary.

#### HENDERSON COUNTY

The Henderson County Medical Society held its semi-annual meeting in Stronghurst, Monday, May 1, 1911, 2 p. m., at Dr. A. E. Lauver's office. Members present were: Drs. I. F. Harter, W. J. Emerson, H. L. Marshall, Edwin E. Bond, J. P. Riggs and A. E. Lauver. Visitors, Drs. J. F. Percy from Galesburg, and A. M. Austin, from Mendon, Ill.

Dr. Percy gave a very interesting paper entitled the "Neurotic Individual and his Surgeon," which was discussed by all present.

Resolutions of the Williamson County Medical Society of March 2nd were read, and by a vote of the Society adopted. Officers for the ensuing year are: President, Dr. I. F. Harter; vice-president, Dr. Hugh L. Marshall; secretary and treasurer, Dr. J. P. Riggs; censor for three years, Dr. W. J. Emerson.

Motion to meet next in Stronghurst.

#### JERSEY COUNTY

The Jersey County Medical Society held its Fifty-fifth Annual Meeting at the Court House, at 2:30 p. m., in Jerseyville, Ill., President A. K. Van Horne in the chair. Minutes of previous meeting read and approved. The annual election of officers resulted as follows: president, A. K. Van Horne; vice-president, M. B. Titterington; secretary and treasurer, R. J. Grimes; delegate, W. F. Bray; alternate, H. R. Gledhill.

The president appointed as censors, Drs. Gledhill, Barnett, and Bohannon. Dr. Carl Black of Jacksonville, Ill., who was to address the meeting, failed to appear. Dr. W. F. Bray from unavoidable reasons was prevented from preparing his paper, and promised to report a very interesting case at our next meeting.

The meeting was thrown open to the society, and the president requested that the doctors report any case which they thought would be of interest. Dr. Titterington gave a report of the x-ray meeting at Chicago, Illinois. Dr. Bray reported a case of dry squamous edema.

Dr. Gledhill reported a case of meningitis in a female who was seven months pregnant. Dr. Barnett and Van Horne, cases of eclampsia. Dr. W. F. Bray

moved that an invitation be extended to the nurses, Mrs. Wayland, Mrs. Fink, Miss Nellie Ford and Miss Kirkpatrick, who were present at the meeting, to partake of a banquet to be given later at the Commercial Hotel. Carried. Moved to adjourn to meet at 5:45 at Commercial Hotel, where a splendid supper was waiting the members.

After partaking of the good things to eat, and all having a general good time, the meeting was adjourned until our next regular meeting, May 9, 1911.

### LASALLE COUNTY.

The LaSalle County Medical Society held its annual meeting at Ottawa, April 25, 1911, with forty members present. The Williamson County resolutions were adopted. The routine business of the society was conducted during the morning. Four new members were elected to membership, i. e., Drs. McIntyre, Troy Grove, McAlley, of Earlville, Leland of Utica and O. P. Harris of Mendota.

Dr. Ensign read his report as delegate to the state meeting at Danville. The following officers were elected for the ensuing year. Dr. E. H. Butterfield, Ottawa, president; Dr. M. E. Blanchard, Marseilles, vice-president; and Dr. A. J. Roberts, secretary-treasurer; Dr. William O. Ensign of Rutland, delegate and Wm. Schoeneshoefer of Lostant, alternate.

Dr. E. E. Palmer presented a case where after an operation for intussusception the wound failed to heal.

Dr. A. D. Bevan gave a very interesting talk on "Surgery of the Stomach."

Dr. Frederick Tice of Chicago presented a paper on "Paracentesis Thoracic."

Dr. P. M. Burke, of La Salle, presented a paper on "Fracture of Patella."

One of the features of the meeting was the president's address by D. S. Conley of Streator.

The society is in flourishing condition showing an increase of membership.

### PRESIDENT'S ADDRESS

D. S. CONLEY, M.D.

STREATOR, ILL.

It is well for us to pause at times in our discussion of technical and scientific subjects, in our discussion of diagnosis, prognosis and treatment, and devote a portion of our time to the consideration of economic, financial and social problems, as they affect the every-day life of the physician. With an observation and experience extending a little over a quarter of a century spent in the active practice of my profession, with, I might say, at least average success, certainly entitles and justifies me in forming some opinions and coming to some conclusions.

You may not agree with me in my conclusions, and you surely have that right. Some men have opinions and never express them, which amounts to the same as a man who never has an opinion of his own to express upon any subject. One is the same as the other, no better no worse. I do not advocate a man going around with a chip continually on his shoulder, waiting for some one to knock it off, neither do I admire a man who constantly disagrees with every other man upon every subject. Such an one is a nuisance in any community. There is a time to be passive, especially upon unimportant subjects, and there is just as surely a time to express your opinion, though it radically differs with others, and then vigorously defend that opinion if necessary to do so. The trouble with the physician is, that he has no opinion on any question outside of his own profession, or if he has one, he is afraid to express it. In my opinion he is too one-sided in his education, he is not broad enough, he confines his reading too much to strictly medical literature. He may be able to tell all that is known about serum treatment, or serum therapy, but very little about Goethe or his Faust, he will tell you the latest that is known about poliomyelitis, but very little about Milton, or his Paradise Lost. He will tell the latest about salvarsan, or 606, but very little about Homer or his Iliad, etc. He does not keep himself sufficiently



well posted upon the current events of the day. I know an estimable physician, with a large and lucrative practice, who, if some great national calamity should occur, such as the assassination of a noted public man or an earthquake destroying thousands of lives, would not know of it in weeks, if some one did not tell him about it. He either does not have the inclination, or thinks he does not have the time to read the daily papers. The physician who is a student of history and literature, ancient, medieval and modern, who knows something of the sciences, and is especially well posted in the current happenings of the day, or in other words has a broad general education, is the one who has the riper and more mature judgment when it comes to diagnosis, prognosis and treatment. True, the medical colleges are doing a grand good work along this line by raising their standards, some requiring two years of college work and others the bachelor's degree from their matriculates before starting upon the study of medicine; but suppose the medical student or the physician, has the bachelor's degree, even then his education has just commenced. It is the constant reader in after life that becomes the well informed man. If it be true that some of you are too busy for outside reading and study, you are busier than you should be, both for your own good and the good of your patients. Give some other physician an opportunity to earn an honest living. Be not so selfish as to want to do all the business in your community, remember there are others who would, at least, like to live, and probably have just as good a right to live on this earth as you have. I have found it a good plan to keep my medical and general library absolutely separate, nothing but medical literature in my office and while there read nothing but medical literature, and while at my home I make it practice to do no medical reading of any kind whatever. This divides the time and gives me ample opportunity for each. I am not by any means, belittling or minimizing the education of the physician, when I so strongly advocate a more liberal education, for I believe his education is the equal, if not greater, than either of the other great professions, and I am sure he has to do more professional reading to keep abreast with the times. I do it not simply to broaden his horizon, but by so doing, he may become something more than just a physician, take an active interest in public affairs, be a leader among men, and assume the position in the community which he is entitled to assume, naturally on account of his education and profession. We are not aggressive enough. We should ask for what we want, and not only ask for it, but see that we get it. We do not take sufficient interest in politics. I do not advise becoming a politician, for at the present time that word politician is very obnoxious to me. I believe that it is absolutely impossible to be a successful politician and be an honest man, but we do not necessarily have to be politicians to take an interest in politics. I see no good reason why all our laws should be made by lawyers principally in the interest of lawyers. The medical profession will never get what it wants, or what it is entitled to, in the way of legislation, until we wake up and become a force or a factor that must be reckoned with. In other words, make the officials and law makers afraid of us and our influence, afraid of the votes they will lose if they do not give us proper consideration, then, and not till then, will we get anywhere near what we want and should have. Do not think for a moment that the average politician will do us justice, or even consider a question on its merits, if a certain kind of influence is on the other side, and that influence seems to be always on the other side whenever we ask for any legislation in our interest, and when in our interest, in the interest of the general public as well. So I say, make them afraid of us and our influence. Then we will get some of the things we want, and not till then.

The politician thinks, and not only thinks but he knows, that the physician takes no interest in politics, consequently he eliminates us as a factor that in any way contributes to his success or failure. We are frequently disappointed in not being recognized, and not receiving the legislation along the lines which we deem necessary for our own well being, but this is largely our own fault, as we never attend a political caucus or convention, and the most of us are afraid to express an opinion for fear that we offend some patron, or hoped-for patron,

thereby losing a dollar. The politician knows this and invariably favors the other fellow. The layman has as much or more respect for our professional knowledge now, than at any time in the past, but I doubt very much that he has a proportionate respect for our progressive citizenship. The advice of the physician is hardly ever asked upon any public question, he is not consulted in regard to political or business affairs pertaining to his community, in fact he is simply a physician, nothing more. In the present general assembly of Illinois, there are seven physicians, which I think way above the average, and over 50 per cent. of the membership is made up of attorneys. Is it any wonder that the interests of the legal profession are safeguarded in every way by legislation, while we can not have a law passed to protect us and the general public from quacks, fakers, pretenders and grafters? So far as I know, there is just one elective office in this great country of ours, that by common consent the physician is permitted to fill, viz., coroner, and the only reason he is permitted to fill this one is because the office is of so little importance, the pay so insignificant, that no one else wants it. Just why this particular office is awarded to the physician, has always been beyond my powers of comprehension, unless it is, he is regarded so near politically dead, that he is naturally selected to handle dead subjects.

I want no office myself, and I am not urging any physician to hold office unless he so desires, but I am urging him to take an interest in these matters. I think the whole attitude of our profession is wrong. It has been taught from time immemorial that our great profession is a charitable one, that a physician should not engage in the practice of medicine, wholly or in part, for the money there is in it, but should be prompted by great philanthropic motives, such as relieving the physically distressed, free service to the poor, and do all this for love of humanity and sweet charity's sake. Such teaching as this is nonsensical and foolish. It is unfair to the undergraduate and physician alike, for it gives them a false conception as to their duties, and is a handicap to their financial success in the years to come. The impression that is so very general among the people, that we will work just the same whether we are paid for our services or not, is responsible for many, many unpaid doctor's bills. We as a class work for money just the same as people engaged in every other line of activity do, and I maintain that this is the proper attitude for us to assume, and the sooner we let it be known that it takes money to buy our services, the better it will be for our profession.

If a young man about to start in the medical profession were to ask my advice, I would say to him: you are about to enter the greatest and grandest profession under the sun, your opportunities for doing good to humanity are unlimited, try to be honest with your patrons, try to be ethical with your brother practitioners, but in addition to all this, let your primary object and principal aim be, to earn a good and sufficient livelihood for yourself and family, and use all honorable and ethical methods to accomplish it. For my part, after all is said and done, I would much rather leave to my family what is their due, something substantial in this world's goods, than to be universally called a good fellow after I am gone, and depend upon my life insurance to bury me. To be called a good fellow does not buy the necessities of life, or educate your children. The physician is charged with not being a good business man, and in this instance he is guilty of the charge. This impression is so marked and prevalent, that he is considered an easy mark for every "get-rich-quick" concern in the country, and is responsible for many bad debts being contracted, and many unpaid bills which might have been collected. I believe in discussing and agitating such subjects as these, upon occasions of this kind, and in that way hope to bring about a remedy for the evils which we all know to exist.

There is nothing which has occurred in recent years, that so clearly demonstrates the attitude of the public toward our profession, as the opposition to the Owen's bill, which was recently introduced in the United States Senate. Our government maintains a department of agriculture, presided over by a full member of the cabinet, but when there is an effort made to have a department of health created, with a secretary who will be a member of the cabinet, it meets

with much opposition from many quarters. This looks as if our government is more interested in the farmers' live stock, hogs, sheep and cattle, than it is in the health of our people. If this be true, then we take ourselves and our profession entirely too seriously.

Every physician in his humble way, does all he can to prevent the spread of all infectious, contagious or communicable diseases, constantly advocating better sanitary conditions, in fact doing all that he can along the line of prophylaxis, knowing full well, that by so doing he is necessarily limiting his own income. To me it has always seemed strange that these efforts have not been appreciated more than they are by the general public. I sometimes think the public would get just what it is entitled to and just what it deserves, if there were to be a general let up all along the line on the part of the physicians, as to prophylaxis, and do just what we are paid for doing and no more. Just a few words in regard to ethics and I am done. Since the time of Hippocrates, there has always been a code to govern the medical man in his professional conduct. The Hippocratic oath coupled with the golden rule are amply sufficient, and if followed by our members, there would be no heart aches, no sore spots one toward another. In a profession that is as well organized as ours, in the county, state and nation, one would think there would be more harmony than there is. We meet in our societies and in our local medical clubs, talk in glowing terms of our grand and noble profession, pat each other on the back, eulogize our members, tell each one how much we think of him and then go out and stab each other in the back. This is no fairy tale, it is the absolute truth, and I am ashamed to have to admit it.

I have never taken much interest in the recently very freely discussed subject of division of fees, and I do not intend to discuss it now, but I am satisfied the subject has two sides and the argument is not all on the one side. For my part, I can not see that it is any worse to ask the foreign surgeon for a division of the fee, than it is for some of us to ask a brother practitioner to do our work for us, collect the fee ourselves and give him half. When some other man does my work for me during my absence, I want him to have what he earns and all that he earns. I have come to the conclusion that our great American code of medical ethics was devised primarily for the benefit, or financial detriment, of the young physician. After a quarter of a century of observation, I have come to the conclusion, that the young man just starting in the practice of medicine, is as a general rule, more ethical than the older and more successful man. As a rule, the higher up a man is, the more money he is making, the less ethical he becomes. He seems to think he has a God given right to do things, that if a young man were to do, he would be the very first to hold up his hands in holy horror. I believe in the same kind of ethics for all, the same for the older and more successful, as for the beginner.

The young, or new physician in a community, is usually all right as long as he does no business. Sure, he may do a little poor business, in fact we may send him work, that we do not want, but just as soon as he commences to get some of our good patients, then he is unethical. We all should know, and do know, that in the large majority of cases the young man succeeds and does business wherever he locates, and in order for him to succeed he must necessarily get some of your patients and some of my patients. Then why so much jealousy and prejudice?

Remembering so well my early struggles in obtaining a practice, and my experience with the older men, I have from that day to this, been in sympathy with the young physician.

I have come to the conclusion that a man can be too honest and conscientious in the practice of medicine, both with his patrons and his confreres, for his own financial good.

At one time, the wife of my preceptor, who was a very strong woman mentally, gave me this advice: "Treat every man as a rascal until you find out differently." While I have not followed this teaching perhaps as much as I should have done, I am satisfied it is good advice. By this you do not have to



show every man that you mistrust him, but you do need to be on your guard, and not place it within his power to do you an injury should he become so disposed. What a great and glorious old world this would be in which to live, if every man practiced the Golden Rule, but they do not do it, the millennium is not here and will not be here during our time, so in the meantime I think it good practice to put into effect the Golden Rule as paraphrased by that honest old character and horse trader, David Harum, "do unto others, as others would do unto you, but be sure and do it first."

This teaching may not be strictly biblical or orthodox, but it is good sound sense, and if followed will be worth dollars and cents to you.

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### MADISON COUNTY

One of the best meetings we ever had, was held at Collinsville, on May 3, 1911, with a large and enthusiastic attendance.

Dr. Eugene Wahl, Jr., of Edwardsville, read a paper on "Cholera Infantum and Allied Conditions," which brought up the entire array of summer diseases in children, a most timely topic. The paper advanced the most recent theory of these diseases and dwelt particularly on prophylaxis by means of correct diet both in quality and quantity. Absolute rest of the stomach, both in the way of food and medicine, was insisted upon in the onset of these conditions. The administration of water was also advised, by way of stomach and colonic flushing. The discussion was of the most enthusiastic order, led by Dr. J. B. Hastings, of Alton, and Dr. Chas. G. Schmidt, of St. Jacob. It was continued until about one-half of those present had spoken, developing every phase of this most universal disorder. It can be truly said that every one present added to this knowledge of these conditions and returned home satisfied that the time was well spent. Several applications for membership were presented, and referred to the board of censors. Those present were: Members, Drs. Yerkes, Ferguson, Wahl, Hastings, Smith, Beard, Sims, Armbruster, Siegel, Burroughs, Schmidt, Merwin, Harrison, Oatman, Braner, Schroepel, Tulley, Hirsch, Johnson, Kerchner and Fiegenbaum. Visitor, Dr. Darwin Schott, of Troy. By vote of the society Dr. Wahl's paper was ordered sent to the ILLINOIS MEDICAL JOURNAL for publication.

The next meeting will be held June 2, 1911, at Beverly Farm, Godfrey, at which time the president, Dr. W. H. C. Smith, will present his annual address, which will be made the sole subject of discussion for that meeting.

E. W. FIEGENBAUM, Secretary.

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### NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION

#### *Thirty-Seventh Annual Meeting, Dec. 10, 1910*

The Thirty-seventh annual meeting of the North Central Illinois Medical Association was called to order at Peru, Dec. 6, 1910, by the president, F. A. Turner, of Sandwich. Members present were F. A. Turner, George A. Dicus, Wm. O. Ensign, C. C. Rogers, LeSage, Middletown, Robinson, J. C. White, A. E. Owens, and L. L. Culver. The roll call was dispensed with. Applications for membership from the following were read and referred: Orie C. Yoder, Samuel G. Mengle, Benjamin J. Nauman and Otto Balensiefer, all of Peru. They were later elected members. The treasurer's report was read and referred. It was found correct.

Dr. Cassius C. Rogers, of Chicago, presented the subject, "Brain Tumors," and presented a specimen. He feels sure that these cases are much more frequent than we are inclined to think, and though they exist in the child are not met with until adults, or at autopsy. The specimen presented was that of a girl aged 8 years. Family history: Father living and well, father's father died at 30, cause, some mental trouble; father's mother died at 51, cause nephritis; mother's mother living at 62; mother's father died of apoplexy. Mother has poor health, and for 6 months after her birth had marked mental disturbances, and two years later another birth, and no mental symptoms whatever. Child was a bottle fed baby.

Irregular fever, headaches, projectile vomiting, unconscious at intervals. July 14 did left temporal decompression. July 15, child became conscious and seemed to do well until July 18, when she became restless, no urine, consolidation of lungs and died July 19 of nephritis and acute congestion of lungs. Cyst proved to be a broken down glioma, but encapsulated. These cases should be recognized earlier and operated on before coma comes on.

General discussion by Middleton, LeSage, Owens, Dicus, Turner and Rogers to close.

Dr. Cressman reported a clinical case.

The report of committee on necrology was called for and Dr. Wm. O. Ensign reported by reading the following obituary of Edward A. Wilcox, M.D., of Minonk, Ill., and the resolution in his memory.

#### OBITUARY

##### OF EDWARD A. WILCOX, M.D., OF MINONK, ILL.

Dr. Edward A. Wilcox, was born at Wattsburg, Erie County, Pa., Sept. 8, 1830, and died at Minonk, Ill., Sept. 23, 1910, at the age of 80 years and 18 days. He was the oldest child of Dr. Levi Wilcox, many years since an early practitioner of Lacon, Ill., to which place he had moved his family in 1837, and at which time the subject of our sketch was about seven years of age. Of this family of children, a younger brother likewise became a physician as were at least two brothers of their mother, and such brother was at one time while a resident of Magnolia, Ill., a member also of this association. This physician, Dr. Levi S. Wilcox, was subsequently a U. S. Consul at Kankow, China, for several years, but later returned to this country and State and again located at Champaign, his death, however, taking place at Los Angeles, California, on August 5 last, and, therefore, but a few weeks in advance of that of the elder brother and at the age of 63 years.

Dr. Edward A. Wilcox received his primary education in the public schools of Lacon, and at Mount Morris Academy. His father having in the meantime passed away, the son began the study of medicine in the office of his Uncle, Dr. R. B. Rodgers, then of Lacon, later continuing it in the office of Dr. Robert Boal, the latter at one time partner of his father and of the same city, and graduated at Rush Medical College, of Chicago, with the class of 1857. Practicing but a single year at his home town, he removed in 1858 to Minonk, Illinois, which was ever afterward his residence to the date of his death. He was twice married, first on June 23, 1857, to Miss Caroline Mathis, who died twenty years later; and again in 1878 to Miss Victoria Boyle. To these unions respectively eight and five children were born, and of the total thirteen, eleven still survive. These include among others Drs. Frederick W. of Minonk, Ill., a member of this association, and Frank T. Wilcox, of LaPorte, Indiana; also Drs. Alfred R., of Twin Falls, Idaho, and Brainard Wilcox, of Minonk, Illinois, dentists.

His public services include three terms as mayor of his home city, two terms as a member of its school board, eight years as post-master, sixteen years as chairman of his party county central committee, twelve years as a member of the State Republican Central Committee, four of these as a member of its executive committee, twice a delegate to the National Convention of his party, and one term, from 1872 to 1876, as state senator of his local district, and member of the Senatorial Committee on Charitable Institutions, being the only physician in the State Senate at the time. He was the author of several legislative bills, and it was through his personal and untiring efforts that the "Anatomical Bill," known as "A Bill to Promote the Science of Medicine and Surgery in the State of Illinois," was not defeated. For his efficient services in its behalf, Rush Medical College of Chicago, his Alma Mater, promptly conferred on him in 1874 an honorary degree.

An early member of the Woodford County Medical Organization, he was likewise a member of the State Medical Society. In 1874, he united with fourteen other physicians of his locality to organize this association, of which he had

been a life member for many years. He was the eleventh of that number to pass away, and the eldest in years of the five only living at the date of his death. He had indeed, experienced the arduous service of a pioneer physician, with the faith and courage always so necessary to sustain one successfully through its exhaustive demands and requirements. His death leaves but four remaining founders of this organization, only two of whom are now residents of this state. He was a man of public spirit, and took great interest and pride in the progress of the community in which he lived.

Naturally of a charitable disposition, he was always ready to lend his influence and efforts for any good cause that met with his favor and approval, and toward the support of which, his services were never given in a merely half-hearted manner. He had acquired a full competence of financial success, and the last years of his life were spent in comparative rest, relaxation, and, as a retired physician, relief from the cares and responsibilities of an active practitioner of medicine.

### RESOLUTIONS

WHEREAS, This Association, by the death, on Sept. 23, 1910, of Dr. Edward A. Wilcox, of Minonk, Ill., has lost one of its founders of thirty-seven years since, and a life member of this organization; therefore be it

*Resolved*, That we, its members who survive him, are deeply impressed with regret and sorrow at the loss our Association and its membership have thereby sustained.

*Resolved*, That while we greatly deplore his death, we are afforded no little consolation in the fact that he had a long and useful life, devoted to the healing of the sick, and to many creditable acts for the public welfare, to an extent far beyond the average of human experience.

*Resolved*, That his venerable four score years of action and diligent effort as a citizen and a physician afford an example of multiple usefulness worthy of considerate approval and cordial commendation.

*Resolved*, That in his death we have lost a valued fellow member, for whose demise we entertain profound sorrow, and to whose afflicted relatives and friends we would extend our sincere and united sympathies in their sad affliction.

Rutland, Ill., Dec. 6, 1910.

WM. O. ENSIGN.

Moved and carried that the report be accepted and a copy of resolutions be spread upon the minutes and a copy of the same be sent to the widow.

Dr. A. E. Owen, of Princeton, read a very interesting paper on "Bacterins in the Treatment of Diseases," and reported cases treated. He has used the vaccine in pneumonia, rheumatism, chronic cystitis, colon infection, etc., with good results, and has a firm belief in its usefulness. General discussion followed by Drs. LeSage, Middleton, Ensign, and Owen to close.

Dr. L. L. Culver, of Sandwich, read a paper on "Arthritis Deformans, Differential Diagnosis and Treatment," which provoked a lively discussion by Drs. Ensign, J. C. White, Robinson, Dicus and Culver. A three minute intermission to meet Drs. Holmes, Houston and Kerr.

Dr. Bayard Holmes, of Chicago, read his paper on "Some Peculiar Cases of Heart Diseases Treated Surgically," which proved intensely interesting to all present. Dr. Holmes believes many of these cases of break-down of the heart to be due to cholecystitis and that cases diagnosed as angina are toxemia from cholecystitis and occur about the fifth decade. The treatment is cholecystotomy by rapid operation.

Dr. Norman Kerr of Chicago, then read an interesting paper, "A Plea for the Early Diagnosis of Extra-articular Tuberculosis About the Hip Joint, and its Prompt Surgical Treatment," in which he makes a plea for an early diagnosis. Discussion by Dr. Holmes, who thinks if foci of tubercular infection can be diagnosed then it would be proper to invade the joint. He denounces emphatically the use of plaster Paris. Dr. Ensign stated that 30 years ago Nature relieved the focus of infection and did it very nicely. Houston advised the tuberculin test



and if positive would operate and find focus. Dr. Kerr in closing the discussion said, "as synovial tuberculosis is rare and epiphyseal tuberculosis is common, we should in operating approach through the neck and leave the joint unmolested and thus get a good joint." He also thinks the cases Nature repaired were not joint cases but extra-articulars.

The nominating was now selected as follows: Bureau, Dr. White; DeKalb, Dr. Culver; Lee, Dr. LeSage; Livingston, Dr. Middleton; Marshall, Dr. Kemp. Grundy, Kendall, Putnam, Whiteside and Woodford Counties were not represented.

Dr. Nauman in behalf of local committee reported dinner would be served at 7:30 followed by a smoker. Adjourned to meet at 7:30 at Hotel Peru.

All were present in the elegant dining-room of the Hotel Peru, and gathered around the tables laden with the many good things, as guests of the local physicians of Peru. After replenishing the physical we were then feasted once more upon the mental.

The president's annual address was then given by Dr. F. A. Turner of Sandwich, his subject was "The General Practitioner as a Factor in the Control of Preventable Diseases."

Dr. James P. Houston of Chicago, read a paper entitled "The Family Doctor," which provoked a good, lively and interesting discussion by Drs. Robinson, Hatton, J. C. White, Holmes, Ensign and Houston.

Dr. Owens moved a rising vote of thanks to be extended to Drs. Holmes, Rogers, Kerr and Houston, and that Drs. Kerr and Houston be made honorary members of this association. Carried unanimously.

A discussion in favor of condensing the meeting into one-day session was freely participated in by those present. Then a motion to arrange program for 1911 for Tuesday only as a trial was made, but ruled out of order according to "Article 5, Section 1."

Moved we adjourn to meet 8:30 a. m. Wednesday, Dec. 7, 1911. Called to order by President Dr. Turner the nominating committee reported as follows: president, Dr. A. E. Owens, of Princeton; first vice-president, Dr. L. W. Burrows, Ottawa; second vice-president, Dr. Ezra T. Goble, Earlville; secretary and treasurer, Dr. George A. Dieus, Streator; board of censors, Drs. A. B. Middleton, of Pontiac, J. M. Kaiser of Somonauk, J. C. White of Seatonville, C. A. LeSage of Dixon, and J. I. Knoblauch of Metamora; chairman on necrology, Dr. F. C. Robinson of Wyanet.

Place of meeting for 1911 was selected as Dixon, Ill.

Moved that the report be accepted and that Dr. White cast the ballot of this association for the officers named. He accordingly cast the unanimous ballot.

Dr. Cook moved that the secretary arrange the program for 1911 so as to occupy but one day. Seconded by Dr. Owens. After discussions motions were lost.

Regular program was now taken up by Dr. Thomas of Peoria, his subject being "The Tonsils as a Cause of Systemic Infection." He claims that about 50 per cent. of children's tonsils are tubercular; that nearly all diseases produced by staphylococcus and streptococcus may occur through tonsillar infections. Enucleations were made as early as A. D. 10. In France they use the snare. <sup>1887</sup>In Germany they use the tonsillotomy snare, doing the operations in the hospitals only, using ether, never nitrous oxid. The writer prefers the upright position. Discussion was postponed until Dr. Cook's paper.

Dr. E. P. Cook exhibited and demonstrated a specimen of primary cancer of the gall bladder by extension involving the adjacent parts, producing obstruction of common duct. Test meal had shown negative from stomach; gall stones had produced ulcer. Discussion of Drs. Thomas and Cook's papers were then participated in by Drs. Kerr, Middleton, LeSage, J. C. White, O. E. Owen and Murphy.

In the discussion the following points were emphasized: Don't give soaking anesthetic as well as analgesia for home operation. A 5-ounce olive oil dose assists patient to overcome effects of anesthetic. Don't give laughing gas when patient has a bad heart; narcosis is long, analgesia short.

Dr. White reports taking nitrous oxid to have wisdom tooth extracted, walked three miles afterwards, went to sleep and could not be awakened for ten hours.

The following resolutions for Dr. Crowley were prepared by Dr. Ensign and read by secretary and adopted.

*Resolved*, That the members of the North Central Illinois Medical Association extend to Dr. Crowley, of LaSalle, their sincere sympathy in his serious recent illness and would extend their hearty good wishes for his early and successful recovery. Moved that a copy be sent to Dr. Crowley and spread upon the minutes.

Dr. Kemp of Lacon requested to withdraw from the association. By motion his request was granted. Moved that the names of Drs. Chas. F. Banta of Eureka, Wm. E. Ramsey Smith, of Grand Ridge, and J. H. Veatch, of LaSalle, be dropped from the roll of membership in accordance with Article 6, Section 4.

Dr. Murphy by request of president Turner, conducted Dr. Owens, president-elect, to the chair.

Moved a vote of thanks to Dr. F. A. Turner for the efficient way in which he has so ably conducted the meeting, which though small in attendance was not wanting in good papers, good discussions, good spirit, and a grand time.

WHEREAS, The members of the North Central Illinois Medical Association have been so generously and hospitably taken care of by the Doctors of Peru, during their thirty-seventh annual meeting, and

WHEREAS, The Knights of Pythias have so kindly donated the use of their hall for our meeting; therefore, be it

*Resolved*, That we, the members of this society, extend a vote of thanks to them, and that the secretary be instructed to furnish them a copy of the above resolutions.

Moved by Dr. LeSage a vote of thanks be extended to the secretary. The program having been completed save those who did not respond, viz.: Dr. H. A. Millard, of Minonk, and J. M. Kaiser, of Somonauk, it was moved that we adjourn to meet at Dixon, Illinois on Dec. 5 and 6, 1911.

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### PIKE COUNTY

At the regular annual meeting of the Pike County Medical Society held April 27, 1911, at Pittsfield in Dr. Duffield's office, there were present Drs. Harvey, Shastid, Lacy, Smith, Garrison, Miller and Duffield. Dr. C. E. Beavers, of Barry, was elected president for the coming year; Dr. W. H. Garrison, of Pearl, vice-president, and H. T. Duffield, of Pittsfield, secretary and treasurer; Dr. J. E. Miller was chosen delegate to the State meeting in May; Dr. W. H. Garrison alternate. Dr. G. T. Gossard, of Perry, was elected a member of our society. The application of Dr. Charles A. Johnson, of Barry, was laid over until next meeting for further investigation.

Resolutions were adopted similar to those of the Chicago Medical Society, requesting help from the State of Illinois for the State University medical department.

Dr. E. L. Crouch, of Jacksonville, was present by invitation, and read a paper on "Dementia Præcox," which was very instructive and was thoroughly discussed by members present.

Dr. C. E. Black, of Jacksonville, also read a paper on "Medical Education," which was interesting and thoroughly enjoyed.

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### RANDOLPH COUNTY.

The Randolph County Medical Society met at Sparta, Illinois, in Dr. H. L. Gault's office at 10:30 a. m. Meeting called to order by President H. L. Gault. Members present: H. L. Gault, A. D. Steele, W. C. Isom, H. C. Adderly, C. Anderson, J. W. Weir, H. L. LeSaulnier, W. J. Seely, H. T. McKee. Minutes of last meeting were read and approved. The following officers were elected: President,

E. L. Hill, Perey; secretary, C. G. Smith, Red Bud; treasurer, C. Anderson, Menard; vice-president, W. C. Isom, Wolf Lake; delegate, W. J. Seely, Red Bud; alternate, J. W. Weir, Sparta; board of censors: A. D. Steele, H. L. LeSaulnier, W. J. Isom. This board required each applicant for membership in this society to present in writing their present location, college they graduated from, date of graduation and year. Dr. George Hoffman in the presence of the board of censors, agrees to renounce the use he has made of unethical terms on his cards, labels, etc. Names of new members are: J. M. Lyons, Prairie du Rocher; George Hoffman, Chester; O. T. Hudson, Menard; G. W. Kimball, Tildon; J. W. Weir, Sparta.

Dr. C. Anderson moved that this society give President Gault and Secretary and Treasurer Steele a vote of thanks for their services; also to the physicians of Sparta for the hospitality they have shown us during this meeting. Chester was selected for next place of meeting, Tuesday, Sept. 5, 1911.

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### ROCK ISLAND COUNTY.

The regular bi-monthly meeting of the Rock Island County Medical Society was held at the Manufacturers' Hotel, Moline, Feb. 14, 1911, at 7 p. m. Minutes of the December meeting were read and approved. As no scientific program had been prepared, the business session was held, after dining. The application for membership of Dr. J. P. McManus which had been presented at the last meeting was reported favorably by the committee and he was then elected unanimously a member. The secretary read a letter from Dr. M. P. Parrish of Decatur requesting this society to have some one read a paper for the surgical section at the Aurora meeting of the State Society. On motion of Dr. First it was ordered turned over to the secretary for action. The secretary reported that several members were delinquent in their dues and paid no attention to his notices. After some discussion, Dr. Sala made a motion that the secretary send these members a final notice, and a copy of Chapter 5 of Constitution and By-Laws, and if no answer was received in thirty days to drop them from the list of members. The following bills were allowed and ordered paid: New Harper Hotel, \$27; Driffel Printing Co., \$2.25; flowers for Dr. E. Wright, \$1.85. Dr. First then presented the following amendments which were laid over under the rules until the next meeting:

Chapter 2, Section 2, to read as follows: The meetings of the Rock Island County Medical Society shall be held on the second Tuesday of April and October.

Chapter 5, Section 1, to read: The annual dues shall be \$5.00 and shall be payable on April 1st of each year.

Drs. Sala, First, Hall and Clark then presented reports of interesting cases which were discussed. Meeting then adjourned.

Present: Drs. Long, Bennett, Snively, Sala, Rinehart, Hall, Love, Chapman, Eddy, Leopold, Clark, Lamping, Meyer, First, Souders and Mueller.

ALBERT N. MUELLER, Secretary.

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### WABASH COUNTY.

The Wabash County Medical Society held its meeting at Mt. Carmel, April 25, 1911. Dr. J. W. Hamilton, of Mt. Vernon, read a paper on "The Significance of Symptoms in the Diagnosis of Infectious Diseases." Clinical cases were presented by Dr. Ben Parmenter of Belmont, Dr. C. E. Gilliatt, and Dr. McIntosh of Allendale. Drs. Parmenter and Nicholas applied for membership.

Mrs. Alice M. Wilson, 3135 Lexington street, Chicago, brought suit for \$20,000 damages against the University Hospital recently. She claims to have been accidentally burned while a patient there.



## NEWS OF THE STATE

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### NEWS

—The cornerstone of the Deaconess Home and Hospital of the Central Illinois Conference of the Methodist Episcopal Church, Peoria, was laid with impressive ceremonies, May 3.

—Provident Hospital, Chicago, has acquired property north of its present location as the result of a campaign which brought in seventy-eight contributions ranging from \$1 to \$1,000.

—The Paul Lawrence Dunbar Sanatorium for Colored Tuberculosis Patients will be established on a tract of land 9 acres in extent lying between Washington Heights and Morgan Park, Chicago.

—A playground for the exclusive use of convalescent children has been established by St. Luke's Hospital, Chicago, on a lot 50 by 153 feet adjoining the institution, which has been purchased and will be fenced in and equipped with outdoor gymnastic apparatus.

—Dr. Harlan W. Long of Elmwood, Ill., is a candidate for supreme medical examiner of the Mystic Workers of the World. The doctor is a member of the state and national associations, and well qualified for the position by experience, temperament and professional ability.

—The State Board of Health announces that Senate Bill No. 140, to regulate the practice of optometry in the State of Illinois, was defeated in the Senate May 3 by a vote of fourteen to ten. Eighteen more senators were present but did not vote. To pass a bill twenty-six votes are required.

—Companion bills providing for the establishment of a state surgical institute for children under 14 years of age and appropriating \$60,000 for buildings and \$15,000 for furnishings were passed by the House of Representatives April 26, without a dissenting vote. The establishment of the institute is dependent on the donation of 160 acres of suitable ground for a site.

—The Leslie E. Keeley Company of Dwight has recently been incorporated at Springfield with a capital of \$25,000; the object to operate a sanitarium; the incorporators are John R. Oughton, Curtis J. Judd, James H. Oughton and H. Belle Oughton. This incorporation and the small capital probably tells a story of interest, the import of which can be readily imagined.

—L. C. Crump, indicted on charges by the State Board of Health for the illegal practice of medicine, was tried before a jury in the municipal court of Chicago and fined \$100 and costs. The defendant is said to have issued cards setting forth that he is a man of God and a divine healer. He is said to have examined each of those who applied to him, prayed with them, gave them a big bottle of medicine and charged \$1.

—Drs. Alice Conklin, Henrietta M. Farquharson, Bertha Van Hoesen, Grace Campbell, Lois L. Wynekoop, Sara J. McCollum and Louise Acres, who were discharged from the staff of Mary Thompson Hospital March 1 on charges of alleged insubordination, have been reinstated, and beginning May 9 the institution is operated under new management. The new plan provides that the Chicago Woman's Club will be represented on the board of control by eight of the twelve members.

—Thirty-five physicians of Oak Park, Austin, Elmhurst and Melrose Park met at the Oak Park Club, May 15, and organized the suburban hospital association. The following officers were elected: president, Dr. Charles E. Humiston, Austin; vice-president, Dr. Charles W. Poorman, Oak Park; secretary, Dr. Fred W. Kettlestrings, Oak Park; treasurer, Dr. Thomas E. Motter, Oak Park. Drs. Humiston, Poorman and William G. Willard were appointed members of the site committee.

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### PERSONAL

Dr. James D. Harlan has been made mayor of Fairfield.

Dr. Emil W. Brust, Addison, started for Berlin, April 3.

Dr. and Mrs. Hugh M. Orr, LaSalle, sailed for Europe, May 3.

Dr. Samuel W. Forney has moved from Chicago to Boise, Idaho.

Dr. Henry J. Gahagan has been named as city physician of Elgin.

Dr. and Mrs. Wallace Blanchard, Chicago, have sailed for Europe.

Dr. Walter B. Schwuchow, Chicago, has moved to Los Angeles, Cal.

Dr. and Mrs. Clarence Brinckerhoff, Chicago, have sailed for Europe.

Dr. and Mrs. Eugene S. Talbot and daughter sailed for Europe May 20.

Dr. Charles N. Hall has been appointed physician for Kewanee Township.

Dr. J. T. Foster, Central City, has been appointed coroner of Marion County.

Dr. Frank L. Hall, Jacksonville, has retired from the practice of medicine.

Dr. Benjamin P. Marsh, Bloomington, is reported to be ill with neurasthenia.

Dr. Joseph C. Myers, Clinton, who has been ill in Decatur, has returned home.

Dr. Theodor F. Gerould, Centralia, has been appointed diphtheria coroner of Marion County.

Dr. Arthur F. Wilhelmy, Decatur, has been detailed for duty at the maneuvers, San Antonio, Texas.

Dr. and Mrs. Martin Van Buren Montgomery, Opdyke, celebrated their golden wedding anniversary, May 6.

Drs. John B. Murphy and E. Fletcher Ingals, Chicago, are reported as convalescent from an attack of typhoid fever.

Dr. Henry J. Pieper, of the University of Chicago, has been appointed assistant professor of physiology in Columbia University.

Dr. William Alexander has been elected president and Dr. William C. Danforth secretary of the Evanston Tuberculosis Institute.

Brigadier-General Alfred C. Girard, U. S. A., retired, and Dr. and Mrs. Theodore Wild, Jr., of Chicago, have returned from Europe.

Dr. Albert Nicholas Mueller has resigned as a member of the board of directors of the Rock Island Municipal Tuberculosis Sanatorium.

Dr. John Earle Meloy of Lincoln, Ill., has moved to Peoria, where he has been appointed to the staff of the Deaconess Hospital of that city.

Dr. Charles G. Beard, Sterling, has been appointed district surgeon for the Northwestern System, vice Dr. Frank Anthony, Sterling, deceased.

Drs. James J. Jennings and H. E. Corley, while riding in their automobile across the grade crossing at the Chicago Terminal Railway, May 4, were struck by a train and painfully injured.

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### NEW INCORPORATIONS

Dr. Sweany Co., Chicago; capital stock decreased from \$100,000 to \$2,500.

Dr. Charlotte Christopher, Chicago; name changed to New Life and Health Tone Company.

Paul Lawrence Dunbar Memorial Sanitarium, Chicago; establish and maintain sanitarium for care of tuberculosis; incorporators, Anna R. Cooner, M.D.; John Zedricks, Louise M. Waller.

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### MEDICAL SOCIETY NOTES

—The Elgin Physicians' Club, at its annual meeting May 1 elected Dr. George J. Schneider president; Dr. Edward H. Abbott vice-president; Dr. Jane Trull secretary and treasurer; and Dr. Charles E. Sisson a member of the executive board.

—The DeKalb County Medical Society at its annual meeting held in Sycamore, April 28, elected Dr. Charles H. Mordoff, Genoa, president; Dr. John B. Nesbitt, Sycamore, vice-president; and Dr. Stoddard L. Anderson, DeKalb, secretary-treasurer.

—The District Medical Society of Central Illinois held its thirty-seventh annual meeting April 25, and elected the following officers: president, Dr. Melvin P. Parrish, Decatur; vice-presidents, Drs. John H. Miller, Pana, and Edgar B. Kerr, Westervelt; and treasurer, Dr. John N. Nelms, Taylorville.

—The LaSalle County Medical Society at its annual meeting held in Ottawa April 25 elected Dr. Everett H. Butterfield, Ottawa, president; Dr. Milton E. Blanchard, Marseilles, vice-president; Dr. Albert J. Roberts, Ottawa, secretary and treasurer; Dr. George A. Dicus, Streator, censor; Dr. William O. Ensign, Rutland, delegate to the state society; and Dr. William Schoenneshofer, Lostant, alternate.

—At the annual meeting of the Brainard District Medical Society held in joint session with the Logan County Medical Society at Lincoln, April 27, the following officers were elected: president, Dr. Edwin P.



Sloan, Bloomington; vice-presidents, Drs. Charles W. Carter, Clinton, Charles B. Caldwell, Lincoln, and Robert A. Noble, Bloomington; secretary, Dr. Harry S. Oyler, Lincoln; treasurer, Dr. Charles C. Reed, Lincoln, and censor, Dr. Athens L. Brittin, Atlanta.

—The annual meeting of the Rock Island Medical Society was held in Rock Island, April 11. The following officers were elected: president, Dr. Warner L. Eddy, Milan; vice-presidents, Drs. Evlan Sargent, Moline, and William D. Snively, Rock Island; secretary, Dr. Albert Nicholas Mueller, Rock Island, (reelected); treasurer, Dr. Arthur Thomas Leipold, Moline (reelected); delegate to the state society, Dr. Henry S. Bennett, Moline, and alternate, Dr. Joseph R. Hollowbush, Rock Island.

—Henderson County Medical Society, at its last meeting, held in Stronghurst, adopted resolutions setting forth the existence of a number of unnecessary medical colleges from which a great number of incompetent or illiterate physicians are graduating; that some of the best-equipped medical colleges owing to competition are graduating improperly qualified physicians; that state boards of examiners have not proved themselves capable of neutralizing the lenient tendencies of certain medical colleges; that many teachers in medical schools reap undue advantage from their connection with such schools in the way of honors and fees; and that the foregoing conditions are disastrous to the country practitioner; and resolving that the management of the American Medical Association be thanked for the services already rendered in the way of elevating medical standards and that it be requested to employ its utmost endeavors still further to raise the standards of medical education and medical practice in the United States.

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## PUBLIC HEALTH

THE PUBLIC DRINKING CUP.—During the past two weeks the laboratory has been engaged in the examination of drinking cups collected in various places in the City of Chicago. In view of the fact that this problem has been handled by numerous competent bacteriologists and that the consensus of opinion among scientific workers has condemned the public drinking cup as dangerous to health, it seems almost superfluous at this time to go further into the subject. Yet, as the problem is now of considerable local interest with pending legislation, it seemed advisable that the investigation here reported be undertaken.

Twenty cups in all were examined, of which nine were from schools, three from downtown hotels, five from railroad depots, two from department stores and one from a children's home. A summary of the bacterial results is as follows: Pavement-epithelium, the cells which form the lining of the mouth, were found adhering to the lip of the cup in eighteen instances. Diphtheria-like organisms were found in two instances. One of these organisms proved to be true diphtheria and caused the death of a guinea-pig in seventy-two hours after subcutaneous inoculation. Influenza bacilli, the cause of lagrippe, were present in two cups; pneumococci were demonstrated six times; streptococci, five times; staphylococci, fif-

teen times, and *Micrococci catarrhalis*, once. Pus was found on the rim of a drinking glass taken from one of the large downtown hotels.

Of the guinea-pigs injected subcutaneously with material from the rim of the cups, five developed abscesses, six became very ill and two died—one with a pus infection and the other with typical diphtheria.

The fact that large numbers of mouth organisms and portions of mucous membrane from the lips and mouth were present in numerous instances leads us to the conclusion that any of the diseases in which the mouth secretions are infectious may be transmitted through the medium of the drinking cup. These would include diphtheria, tuberculosis, syphilis, scarlet fever, measles, lagrippe and ordinary colds.

Even in less public places than railroad stations, hotels, schools, etc., the use of the drinking cup is not without its dangers, but under circumstances such as obtain in schools and in the loop district, where thousands of persons may use a single cup during the period of a few hours, the chance that it will be used by an infected individual or a "bacillus carrier" is multiplied to such an extent as to be no longer a chance, but a certainty. As such it must be reckoned with as a definite channel for the spread of infectious diseases.

The proposed legislation now pending both before the city council and the legislature at Springfield represents a step in the right direction, which has already been taken by a number of other communities and which should receive all possible encouragement and support.—*From Bulletin, Chicago Department of Health.*

—This issue of *The Bulletin*, a Baby Welfare number, is not only double its usual size, but many times increased in the value and excellence of matter presented.

Some little time ago, in view of the wide general interest manifested in the Child Welfare Exhibit, the department invited a number of Chicago physicians, all of them specialists in diseases of children and in their care and rearing, to contribute short articles covering many phases of this important field of public health work.

The physicians thus solicited responded in a splendid spirit of cooperation, and with the result that we are enabled to present a symposium of articles which, taken as a whole, are a valuable contribution to the literature of health education.

Dr. Effa V. Davis writes in a plain and popular way on the "Care of the New-Born Baby." Her article should be carefully read by every mother in Chicago. It is practical, plain, and covers in a most thorough way the subject treated.

Dr. John M. Dodson writes briefly but forcefully on the subject of "Breast Feeding." He urges the importance of mother's milk, making it perfectly clear that no other food is or can be so good. He adds: "God pity the baby who cannot get mother's milk."

Dr. Frank W. Allin presents in a collection of epigrammatic statements the reason why the baby should have open air and exercise. Here is one, for example, that every mother should memorize: "As wood in the stove without the drafts open, so is food in a child without fresh air."

Dr. A. C. Cotton gives a lot of excellent advice on "Baby's Milk" and its care and handling in the home.

No less important and valuable is the article by Dr. Frederick W. Belknap on "Teething." In this little talk the doctor gives many valuable hints and suggestions. Among other things, he warns the mother that if the baby does not have two teeth at the age of 8 months she would better look for some error in the food.

Dr. Joseph Brennemann presents an excellent little article on "Diarrheal Diseases." He tells us that out of every hundred babies in the civilized world twenty-five die each year. He gives much excellent advice on feeding and emphasizes the fact that it is the first summer—not the second—that kills the babies.

Dr. Isaac A. Abt treats at some length of the "Resistance and Infections of Infancy." He also calls attention to the crying need of hospital facilities for the care of the acute contagious diseases in children.

Last, but not least by any means, is the excellent article contributed by Dr. Frank X. Walls on "Contagious Diseases," without which the series as we have here presented would be incomplete.

The department feels that the doctors who have contributed to this number of *The Bulletin* have rendered a valuable service to the community. This is the least acknowledgment that could be made of the time and labor given and leaves out of consideration altogether the value of their contributions, embodying, as they do, so much of the skill and ability of the writers.

In view of the fact that there will be a wide demand for this issue of *The Bulletin*, the department has ordered an edition of 25,000 copies, so that any who care to have it need not be denied. It is a number that should be carefully preserved.—*From Bulletin, Chicago Department of Health, May 12.*

—The Child Welfare Exhibit held at the Coliseum, Chicago, May 11-25, was the most successful presentation of everything relating to child life that the inventive faculties of numerous students of social conditions could devise. The attendance in spite of the intense heat of the first week was over 416,000.

The basis of the exhibit was the material shown in New York in February last at an expense of \$70,000. Through the benevolence of Mrs. Cyrus Hall McCormick, Jr., the whole New York exhibit was removed to Chicago and the active cooperation of numerous societies and individuals was secured to add material especially adapted to local conditions. The combined exhibit filled the Coliseum and annex which were open daily from 10 till 10. The following general committees show the scope of the work: Homes, Work and Wages, Health, Recreation and Amusements, Streets, Schools, Libraries and Museums, Laws and Administration, Social Settlements, Associations and Clubs, Churches, Temples and Sunday Schools, Public and Private Philanthropy. One thousand explainers showed visitors the points of interest. Daily conferences were held in the Coliseum or in Grace Church adjoining by special speakers. Children from the public schools of certain districts sang and gave drills



each afternoon, and demonstrated manual training in the annex, then visited the sections of the show.

The Chicago Department of Health was well represented. Of two ingenious mechanical models devised by Dr. C. St. Clair Drake, one showed the vitiation of the air in unventilated rooms and the other showed death striking down every fourth baby. "One baby out of four dies before it is a year old. Seventy per cent. of these deaths are preventable." A "Motherhood" booth was dedicated to impressing the advantage of nursing the baby over feeding it through a "60-mile tube"—the average haul of city milk with its numerous chances of pollution. The food inspection and laboratory sections were the center of interest of many visitors and at frequent intervals talks on dairy inspection were given, illustrated by photos thrown on a screen by the "boloscope."

Mr. Frank E. Wing of the Tuberculosis Institute was chairman of the Committee on Health and through cooperation with the Health Department was enabled to secure one of the best displays. Numerous artistic placards added interest to the texts. A young lady artist sketching in one of the booths was constantly the center of an admiring throng.

Among the displays deserving special mention were the exhibits of the New York Society for the Prevention of Blindness and the Open Air School.

—Here are some of the facts concerning a work that has a distinct community value:

In 1908 Dr. M. G. Overlock, state medical inspector for the Worcester (Mass.) district, asked the manufacturers of that district, some 400 in number, to enter into an agreement pledging themselves to pay the expense of care and treatment of any of their employees who might be attacked with consumption. This request was promptly granted and the agreement put into effect. The resulting movement soon attracted considerable attention and was almost immediately taken up by the Boston Chamber of Commerce and adopted by unanimous vote of that body.

Not satisfied with what he had succeeded in doing in the Worcester district; Dr. Overlock began a campaign of lectures and talks before boards of trade and manufacturers' and merchants' associations, and up to date has enlisted over 1,200 employers of labor in this important work. The doctor estimates that not less than 1,500,000 people are now being protected under agreements similar to that he first secured from the manufacturers of Worcester.

In a recent letter to the editor of *The Bulletin* the doctor says: "About 500 people have been sent to different sanatoria or to places where they could obtain proper care and attention. Many have been cured and returned as teachers to the communities in which they lived. My thought has been to take care of the incipient case and to secure the removal of advanced cases that were sure sources of infection to others."

It is gratifying to note that Dr. Overlock's work has attracted attention beyond his own country. He has had inquiries from France, Bulgaria and other foreign countries, and Japan sent a special representative to make a careful study of his methods and the results obtained.

The department is glad to make mention of Dr. Overlock's work and to commend the action taken by the manufacturers of Worcester and New England to the favorable consideration of employers of labor in Chicago and Illinois. Verily, it is a good work and one which is of the highest community value.—*From Bulletin, Chicago Department of Health.*

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## MARRIAGES

BEN PARMENTER, M.D., to Miss Ethel Brumfield, both of Bellmont, Ill., April 1.

ROY WHITTIER PORTEUS, M.D., Chicago, to Miss Edith S. Wells of Evanston, April 18.

CARL O. BERNHARDIE, M.D., Rock Island, Ill., to Miss Edith Snyder of Terre Haute, Ind., April 19.

JAMES S. ARCHIBALD, M.D., Nokomis, Ill., to Miss Julia LeHurt of St. Louis at Edwardsville, Ill., April 15.

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## DEATHS

GEORGE TAYLOR, M.D., University of Louisville, Ky., 1910; died at his home in Kempton, Ill., April 1, from appendicitis, aged 23.

HARRY ROSS WALLACE, M.D., College of Physicians and Surgeons, Chicago, 1891; of Chicago: a member of the American Medical Association; died in St. Joseph's Hospital, Alton, Ill., April 12, from diabetes, aged 54.

J. R. TROTT, M.D., Mission Medical College, 1857; for many years a practitioner at Virden, died May 3, 1911, at San Diego, Cal. Dr. Trott was born in Morgan County. He is survived by his wife and one son. His age was about 77.

CHARLES STUART ELDER, M.D., Rush Medical College, 1863; a veteran of the Civil War; a member of the school board; for two terms alderman, and in 1872 mayor of Chenoa, Ill.; died at the home of his daughter in that city, April 12, from senile debility, aged 75.

HARRY H. BAKER, M.D., Chicago Homeopathic Medical College, 1897, of Chicago, died at the residence of Dr. W. H. Freeman in Brooklyn, N. Y., of chronic heart disease, May 13, 1911. Dr. Baker was born at Atlanta, Ill., Oct. 5, 1865. He is survived by his wife and two children.

ETHAN P. ALLEN, M.D., Rush Medical College, 1866; a veteran of the Civil War; for more than twenty years a practitioner of Stillman Valley, Ill., but later of Rockford; physician of Winnebago County; died at the Ransom Sanitarium in that city, April 6, from cerebral hemorrhage, aged 70.

ANDREW F. HAMMER, M.D., Hahnemann Medical College, Chicago, 1878, died at his residence in Taylorville, Ill., May 3, 1911, of Bright's disease, aged 61. He located in Berry, Sangamon County, and after 15 years' residence there went to Taylorville, where he has since resided. He is survived by his wife and two daughters.

JAMES ROBERT ZEARING, M.D., Rush Medical College, 1850; surgeon of the Fifty-Seventh Illinois Volunteer Infantry and later chief surgeon of the Fourth Division, Fifteenth Army Corps, serving throughout the Civil War; said to have been the oldest alumnus of Rush Medical College; who had been blind for twenty-five years; died at his home in Chicago, April 16, from cerebral hemorrhage, aged 81.

JOHN H. JANEWAY, M.D., University of Pennsylvania, Philadelphia, 1852; colonel, Medical Corps U. S. Army, retired; died in the Kenilworth (Ill.) Sanitarium, April 14, from paralysis, aged 82. Dr. Janeway entered the medical corps of the Army in 1861 and served throughout the Civil War, being brevetted major and lieutenant-colonel for gallantry. He was retired with the rank of lieutenant-colonel on account of age, Aug. 12, 1893, and afterward made his home with his son in Chicago and Kenilworth. He had been disabled for several years on account of cerebral hemorrhage.

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## Book Notices.

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PRACTICAL MEDICINE SERIES, 1911. Volume 1. Price of each Vol. \$1.50. Price of Entire Series \$10.00. The Year Book Publishers, 40 Dearborn Street, Chicago, Ill.

This series began its yearly review, and the first volume on General Medicine by the Editors Drs. Billings and Salisbury, gives every evidence of a continuation of the excellent volumes of previous years. Undoubtedly these volumes are considered cheaper and the best reviews of science of medicine issued at this time and we cordially welcome them to our readers.

BISMUTH PASTE. By Emil J. Beck, M.D., Surgeon to the North Chicago Hospital, Chicago, Ill., with an Introduction by Carl Beck, M.D., and a chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear, by Joseph C. Beck, M.D., St. Louis. C. V. Mosby Company. 1910.

It is only a short time since Dr. Beck in the columns of the ILLINOIS MEDICAL JOURNAL, announced the accidental discovery of the beneficent effects of bismuth paste. This subject has been taken up all over the world so eagerly that Dr. Beck has yielded to the demands of the profession, and produced this book which is an epitome of his practice and the use of the paste in the different parts of the body. Unfortunately many people believe that the use of the paste is dangerous, and of course it is unless it is used after the methods proposed by the author. When so used, however, there is absolutely no danger, and we believe that the paste is destined to become more and more useful as experience shows the best methods of using it.

We therefore commend this valuable work to the profession and trust that it will have a welcome reception.

THE PRACTICE OF SURGERY. By James G. Mumford, M.D., Instructor in Surgery in the Harvard Medical School. Octavo of 1015 pages, with 682 illustrations. Cloth \$7.00 net; half morocco, \$8.50 net. W. B. Saunders Company, Philadelphia and London, 1910.

Dr. Mumford in his work of one thousand pages, endeavors to give the reader an account of surgery as it is seen at the bedside, in the accident ward and the operating room. The writing is elaborated from many years of active hospital and private practice, from clinical teachings, class room discussions and lectures. Surgical diseases are taken up in their order of interest, importance and frequency; the common and grave ailments being considered more important than those seldom seen. A review of the contents shows that this has been carried out to a reasonable extent. We wonder why nothing has been said of the Brophy operation for cleft palate; the Andrews operation for hydrocele; and the operative



treatment of fractures on the lines laid down by Lambot and Lane. Taken all in all the work is one worthy of place in the library of every practitioner. It gives us an insight to modern surgery as practiced in the New England metropolis. Facing the title page are two cuts illustrating the old time operating room where the first public demonstration of anesthesia was given Oct. 16, 1846, and the Bigelow amphitheater of the Massachusetts General Hospital in 1908. These are eloquent reminders of the old and new surgery.

**SPECIAL SYPHILIS NUMBER.** The editors of the *Interstate Medical Journal*, St. Louis, announce the publication of a symposium number on Syphilis for January.

The list of articles reads as follows: "The Influence of Syphilis on Civilization," Wm. Osler, M.D., Oxford University; "Present Status of the Noguchi Test," Hidego Noguchi, M.D., New York; "On the Means of Finding the Spirochæta Pallida, with Special Reference to the India Ink Method" (from the Laboratory of the Michael Reese Hospital), J. S. Cohn, M.D., Chicago; "The History and Methods of Application of Ehrlich's Dioxydiamido-arsenobenzol" (from the Royal Institute for Experimental Therapeutics), Lewis Hart Marks, M.D., Frankfort a. M.; "Recent Progress in the Treatment of Syphilis," H. Hallopeau, M.D., Paris; "Treatment of Syphilis with Ehrlich-Hata '606'," Abr. L. Wolbarst, M.D., N. Y.; "Syphilis of the Nervous System," Ernest Jones, M.D., Toronto; "Syphilis and Pulmonary Tuberculosis," Robert H. Babcock, M.D., Chicago; "Syphilis as a Cause of Pauperism," A. Ravogli, M.D., Cincinnati; "Giant Cells in Syphilis," John A. Fordyce, M.D., New York; "Personal Observations with the Ehrlich-Hata Remedy '606'," B. C. Corbus, M.D., Chicago; "Syphilis and the Public," Isadore Dyer, M.D., New Orleans; "Sanitary Regulation of Prostitutes," Prince A. Morrow, M.D., New York.

In addition to the above, there will be four "Collective Abstracts" (critical reviews of recent literature in collective form) on (1) Ehrlich Hata "606," (2) the Cerebrospinal Fluid in Syphilis and Parasyphilitic Diseases, (3) Serum Diagnosis of Syphilis, (4) Diagnosis of the Osseous Lesions of Syphilis by the X-Ray.

**DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN.** By Harry Sturgeon Crossen, M.D., Professor of Clinical Gynecology, Washington University; Gynecologist to Washington University Hospital and Director of the Gynecological Clinic; Gynecologist to St. Louis Mullanphy Hospital, to Missouri Baptist Sanitarium, to Bethesda Hospital, and to the St. Louis City Hospitals; formerly superintendent of the St. Louis Female Hospital; Fellow of the American Gynecological Society, of the American Association of Obstetricians and Gynecologists, and of the Western Surgical and Gynecological Society. Member of the American Medical Association, Missouri State Medical Association, St. Louis Medical Society, etc. C. V. Mosby Company, St. Louis, Publishers.

Dr. Crossen has dedicated this work to Dr. H. H. Mudd, one of the most highly esteemed surgeons who ever practiced in the West, and the second edition fully bears out the intention and object of the first, in presenting clearly and in detail the foundation facts and principles of Gynecology, the anatomic, pathologic, diagnostic and therapeutic information underlying successful gynecologic work.

"Two hundred pages of text and fifty illustrations have been added. The index, upon which the practical usefulness of a medical book so largely depends, has been greatly amplified, so as to include references and cross references to every diagnostic and therapeutic item. In the new text special attention has been given to the presentation of pelvic inflammation and of tubal pregnancy, two live and important subjects, upon which an enormous and chaotic mass of information has accumulated. To properly emphasize the established landmarks and point out important features of advance work, such was the task. Disturbances of function merit, and have received, careful and detailed consideration, both from the diagnostic and therapeutic standpoint. Medico-legal complications are claiming more and more attention each year, and those connected with gynecology are considered in a detailed and practical way."

Dr. Crossen's book has been received by the profession as one of the best works on this particular subject and he should be congratulated on his success.

# ILLINOIS STATE MEDICAL SOCIETY

## MEDICO-LEGAL COMMITTEE

### EXECUTIVE COMMITTEE.

#### FROM ILLINOIS MEDICAL SOCIETY.

H. N. Moyer, 103 State St., Chicago.  
Central 2751.  
Clarence W. Leigh, 100 State St., Chicago.  
E. W. Wels, Ottawa, Ill.

C. D. Pence, 1668 Turner Ave., Chicago.  
Canal 1335.  
M. L. Winstead, Wetaug, Ill.  
J. M. Pfeiffenberger, Alton, Ill.

#### FROM CHICAGO HOMEOPATHIC MEDICAL SOCIETY.

N. B. Delameter, 31 Washington St.,  
Chicago. Central 1926.

J. B. Cobb, 42 Madison St., Chicago.  
Central 32.

### GENERAL COUNSEL.

Calhoun, Lyford & Sheean, 806 The Rookery, Chicago.

County and Representative.	Address.
Adams—John A. Koch.....	Quincy
Alexander.....	
Bond—Not appointed yet.....	
Boone—A. J. Markley.....	Belvidere
Brown—William Parker.....	Mt. Sterling
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Calhoun.....	
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H. N. Moyer.....	103 State St., Chicago
C. D. Pence.....	1668 Turner Ave., Chicago
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Christian—J. H. Miller.....	Pana
Clark—R. H. Bradley.....	Marshall
Clay—E. P. Gibson.....	Louisville
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Greene—H. A. Chapin.....	White Hall
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Iroquois-Ford—O. O. Hall.....	Milford
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St. Clair—F. E. Auten.....	Belleville
Saline.....	
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